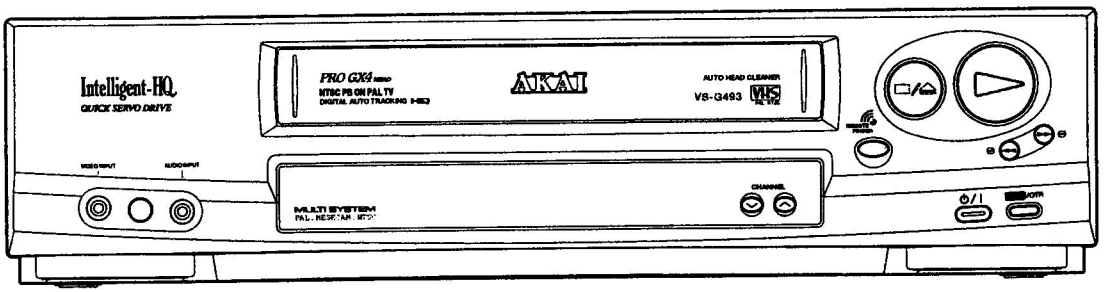
VS-G280 series
VS-G290 series

AKAI SERVICE MANUAL



MODEL VS-G493EM

HQ HIGH QUALITY VHS PAL SECAM

SHOWVIEW® G-CODE

VIDEOPlus+

VIDEO CASSETTE RECORDER

MODEL **VS-G280** EA/EDG/EK/EO/ES

MODEL **VS-G281** SEG, **G285**EA, **G286**EO

MODEL **VS-G290** EM, **G291** EO, **G293** EM

MODEL **VS-G295** EK, **G297** EK

MODEL **VS-G296** EDG/EO/SEG

MODEL **VS-G480** EA/EDG

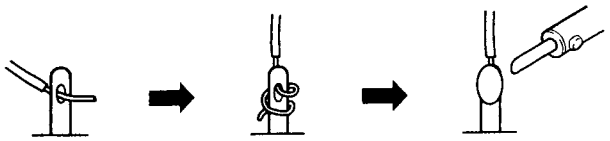
MODEL **VS-G481** SEG, **G485** EA, **G493** EM

MODEL **VS-G496** EDG/EO/SEG

★ SAFETY INSTRUCTIONS

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ symbol are critical for safety. Replace them only with the parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with the specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts.
   Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (insulating barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing micro switches
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap the ends of the wires securely around the terminals before soldering.



6. Make sure that wires do not contact heat producing parts (heat sinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Make sure that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

SAFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit.
The leakage-current measurement should be done between accessible metal parts (such as chassis, ground terminal, microphone jacks, signal input/output connectors, etc.) and the earth ground through a resistor of 1500 ohms paralleled with a 0.15 µF capacitor, under the unit's normal working conditions.
The leakage-current should be less than 0.5 mA rms AC.
The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2 M ohms.

MAKE YOUR CONTRIBUTION TO PROTECT THE ENVIRONMENT

Used batteries with the ISO symbol for recycling as well as small accumulators (rechargeable batteries), mini-batteries (cells) and starter batteries should not be thrown into the garbage can.
Please leave them at an appropriate depot.

★ SPECIFICATIONS (AKAI brand models)

Format	VHS standard
Video recording system	Rotary, slant azimuth two head helical scan system
Rotary heads	
G480,G481,G485,G493 and G496 models	4 video heads
Except above models	2 video heads
RF input	
EA	System B,G VHF: ch 0 - 5, 5A, 6 - 12, UHF: ch 21 - 69
EDG	System D,K VHF: ch 1 - 12, UHF: ch 21 - 69 System B,G VHF: ch 2 - 12, UHF: ch 21 - 69 Cable: ch S1' - S3', S1 - S41
EK	System I UHF: ch 21 - 69
EM	System B,G (PAL,SECAM) VHF: ch 2 - 12, UHF: ch 21 - 69
EO	System B,G (PAL,SECAM) VHF: ch 2 - 4, 5 - 12, UHF: ch 21 - 69 Cable: ch S1' - S3', S1 - S41
ES	System I (PAL,SECAM) VHF: ch 2 - 12, UHF: ch 21 -69 VHF: 4 - 13 (South Africa)
SEG	System L VHF: ch B - C, 1 - 6, UHF: ch 21 - 69 Cable: ch B - Q System B,G VHF: ch 2 - 4, 5 - 12, UHF: ch 21 - 69 Cable: ch S1' - S3', S1 - S41
RF output	
EA	System G type modulation UHF ch 30 - 39 adjustable (preset: ch 37)
EDG	System K/G type modulation UHF ch 30 - 39 adjustable (preset: ch 36)
EK	System I type modulation UHF ch 21 - 69 adjustable (or off) (preset: ch 35)
EM	System B type modulation VHF: ch 3, 4 switchable (preset: ch 4)
EO	System G type modulation UHF ch 30 - 39 adjustable (preset: ch 36)
ES	System I type modulation UHF ch 30 - 39 adjustable (preset: ch 36)
Recording (line input)	
EA (except G485)/EK	PAL
G485EA	PAL, NTSC (3.58/4.43)
EDG/EM/ES	PAL, SECAM (recorded as MESECAM), NTSC (3.58/4.43)
EO	PAL, SECAM (recorded as MESECAM)
SEG	SECAM, PAL, MESECAM
Playback (line output)	
EA (except G485)/EK	PAL, simulated PAL (NTSC tape)
G485EA	PAL, NTSC (3.58/4.43) (NTSC tape), simulated PAL (NTSC tape)
EDG/EM/ES	PAL, SECAM (MESECAM tape), NTSC (3.58/4.43) (NTSC tape), simulated PAL (NTSC tape)
EO	PAL, SECAM (MESECAM tape), simulated PAL (NTSC tape)
SEG	SECAM, PAL, MESECAM, simulated PAL (NTSC tape)
Video	
Line input level	0.5 - 2.0 Vp-p/75 ohms, unbalanced
Line output level	1.0 Vp-p/75 ohms, unbalanced
S/N ratio	More than 45 dB
Horizontal resolution	More than 250 lines (PAL) More than 220 lines (SECAM: SEG only) More than 220 lines (NTSC)
Audio	
Line input level	–6 dBs/50 k ohms, unbalanced
Line output level	–6 dBs/1 k ohms, unbalanced
S/N ratio	More than 40 dB
Frequency response	70 - 8,000 Hz
Recording/Playback time	
CCIR	240 min. with E-240 cassette in SP mode 480 min. with E-240 cassette in LP mode (except G291EO & G291,G296SEG)
NTSC	160 min. with T-160 cassette in SP mode 480 min. with T-160 cassette in EP mode (except G291EO & G291,G296SEG) (except EDG/ES/EM models: playback only on both SP & EP modes)
Tape speed	
CCIR	23.39 mm/sec. in SP mode 11.695 mm/sec. in LP mode (except G291EO & G291,G296SEG)
NTSC	33.35 mm/sec. in SP mode 11.12 mm/sec in EP mode (except G291EO & G291,G296SEG)
Quick finder	
CCIR	Approx. 11 times normal speed in both SP/LP modes
NTSC	Approx. 7 times normal speed in both SP/EP modes
FF, RWD time	Approx. 2.5 min. with E-180 cassette
Timer	
Program	8 programs/1 year and OTR
Clock reference	Quartz crystal
Display	TV screen & FLD (tape counter, timer, etc.)
Power requirement	
EM	110 - 240 V AC, 50/60 Hz
Except EM	220 - 240 V AC, 50 Hz
Power consumption	
EA/EDG/EO	14 W
EK/EM/ES	13 W
SEG	15 W
Operating temperature	5° C - 40° C
Dimensions	380 (W) x 93 (H) x 298 (D) mm
Weight	3.6 kg

Standard accessories	
AC cord	1
Antenna cable	1
21 pin AV cable	1 (SEG only)
Remote control unit	1
Batteries for remote control	2
Operator's manual	1

0 dBs = 0.775 VRMS

* For improvement purposes, specifications and design are subject to change without notice.
* VIDEO Plus+ and PlusCode are registered trademarks of Gemstar Development Corporation.
  The VIDEO Plus+ system is manufactured under licence from Gemstar Development Corporation.
* ShowView is a trademark of Gemstar Development Corporation.
  The ShowView system is manufactured under licence from Gemstar Development Corporation.
* G-CODE is a trademarks of Gemstar Development Corporation.
  The G-CODE system is manufactured under license from Gemstar Development Corporation.

★ SPECIFICATIONS (non-AKAI brand models)

Format	VHS standard
Video recording system	Rotary, slant azimuth two head helical scan system
Rotary heads	
3048CE	4 video heads
Except 3048CE	2 video heads
RF input	System B,G (PAL,SECAM) VHF: ch 2 - 4, 5 - 12, UHF: ch 21 - 69 Cable: ch S1' - S3', S1 - S41
RF output	System G type modulation UHF ch 21 - 69 adjustable (or off) (preset: ch 36)
Recording (line input)	PAL, SECAM (recorded as MESECAM)
Playback (line output)	PAL, SECAM (MESECAM tape), Simulated PAL (NTSC tape)
Video	
Line input level	0.5 - 2.0 Vp-p/75 ohms, unbalanced
Line output level	1.0 Vp-p/75 ohms, unbalanced
S/N ratio	More than 45 dB
Horizontal resolution	More than 250 lines (PAL) More than 220 lines (NTSC)
Audio	
Line input level	–6 dBs/50 k ohms, unbalanced
Line output level	–6 dBs/1 k ohms, unbalanced
S/N ratio	More than 40 dB
Frequency response	70 - 8,000 Hz
Recording/Playback time	
CCIR	240 min. with E-240 cassette in SP mode 480 min. with E-240 cassette in LP mode (3048CE only)
NTSC (playback only)	160 min. with T-160 cassette in SP mode 480 min. with T-160 cassette in EP mode (3048CE only)

Tape speed	
CCIR	23.39 mm/sec. in SP mode 11.695 mm/sec. in LP mode (3048CE only)
NTSC	33.35 mm/sec. in SP mode 11.12 mm/sec in EP mode (3048CE only)
Quick finder	
CCIR	Approx. 11 times normal speed in both SP/LP modes (LP mode: 3048CE only)
NTSC	Approx. 7 times normal speed in both SP/EP modes (EP mode: 3048CE only)
FF, RWD time	Approx. 2.5 min. with E-180 cassette
Timer	
Program	8 programs/1 year and OTR
Clock reference	Quartz crystal
Display	TV screen & FLD (tape counter, timer, etc.)
Power requirement	220 - 240 V AC, 50 Hz
Power consumption	14 W
Operating temperature	5° C - 40° C
Dimensions	380 (W) x 93 (H) x 298 (D) mm
Weight	3.6 kg

Standard accessories

AC cord	1
Antenna cable	1
Remote control unit	1
Batteries for remote control	2
Operator's manual	1

0 dBs = 0.775 VRMS

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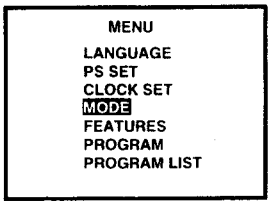
The ShowView system is manufactured under licence from Gemstar Development Corporation.

★ INFORMATION

MULTI FUNCTION MENU MODE

This is an on-screen display of the various modes you can programme via the TV screen.

TV SCREEN

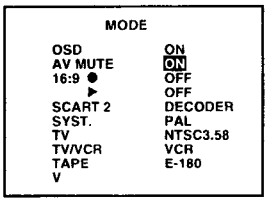


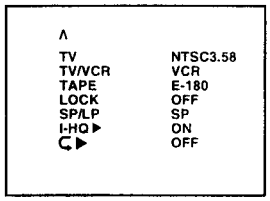
LANGUAGE : To select a language for the on-screen displays.

PS SET : To preset or cancel TV stations.

CLOCK SET : To set the clock and AUTO ADJUST TV station.

MODE





: To set OSD (on screen display ON/OFF), AV MUTE (ON/OFF), 16:9 (REC ON/OFF, PB ON/OFF), SCART-2 (DECODER/AV2), SYST. (color system PAL/MESECAM/NTSC → PAL/NTSC4.43), TV (NTSC3.58, NTSC4.43, NTSC → PAL), TV/VCR, TAPE (E-180, 195, 210, 240, 260, 300), LOCK (OFF/ON), SP/LP, I-HQ (ON/OFF) and ↻▶ (repeat ON/OFF).

FEATURES : To perform ↻0 (return to counter zoro), INTRO (intro scan) or T. TUNING (tape tuning) functions.

PROGRAM : To set manual timer recording.

PROGRAM LIST : To review the times, dates or cancel programs that you have entered for timer recording.

If necessary, refer to the respective sections in the operator's manual for detailed information.

※ Some modes are not available on certain models.

1. Press the "MENU" button on the remote control unit.
   The menu list screen will be displayed on the TV screen.
2. Select the desired menu with the "∧" or "∨" button.
3. Press the "OK" button.
   The selected menu screen will be displayed on the TV screen.
4. Select the desired mode (or function) with the "∨" or "∧" button. The number of the modes (or functions) depends on the sort of the menu.
5. Set the each mode (or function) by pressing the "∨" or "∧" button and ">" or "<" button.
6. Press the "OK" button.
   The selected menu screen will be disappeared few seconds after the "OK" button is pressed. This means the setting has been completed correctly.

MANUAL TRACKING/PICTURE/STABILITY ADJUSTMENT

Using the remote control, the VCR can be adjusted for tracking and picture sharpness anytime during the playback mode.

- Manual tracking control
  Press the "<" or ">" button repeatedly until the picture is clear. During manual tracking adjustment, the tracking position is shown on the TV screen, and disappears automatically after adjustment has been completed. Use this function when performing the A/C HEAD phase adjustment.
- Picture sharpness control
  Press the "∧" button repeatedly to sharpen the picture or press the "∨" button to soften the picture.
- Stability adjustment

1) To correct picture shake during the slow motion or still mode:
   Press the "∧" or "∨" button repeatedly until the picture shake is corrected.
2) To correct tracking during the still mode:
   Press the "<" or ">" button repeatedly until the picture is clear.

ERROR ANNOUNCEMENT

When a malfunction occurs, the following error indicators appear on the FL display to indicate the problem when the power is turned off.

Err 1 : AL power supply has short circuited.

Err 2 : The loading motor has stopped.
(When the mechanism position detect switch is not able to read the specified code, that is to say not able to reach the specified position within the specified time.)

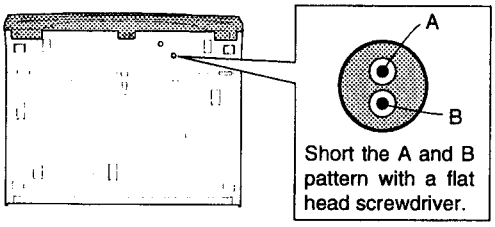
Err 3 : The drum motor has stopped.
(When the drum motor does not rotate due to condensation, etc.)

Err 4 : The capstan motor has stopped.

PRESETS IN THE TEST MODE

1) Engaging the "TEST MODE"

To set the VCR to the test mode, firstly short the reset circuit pattern located on the bottom as shown below, with a flat head screw driver (This will ground the reset pin of the system control MI-COM). Next, plug in the AC power cord while pressing and holding both the "STANDBY/ON" and "STOP/EJECT" buttons (on the FRONT PANEL) at the same time.

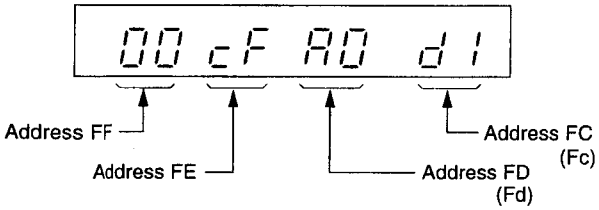


Short the reset circuit pattern to disengage the "TEST MODE". (The test mode is not disengaged, even if the AC power cord is disconnected, without shorting the reset circuit.

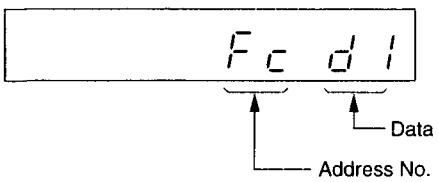
NOTE: Once the system control MI-COM is reset, clock and program data will be cancelled.

2) Model code preset

1. Engage the "test mode". (Never turn the power on.) The model code will be displayed in the FL display in 8 digit form.



2. While pressing both the "FF" and "RWD" buttons, reset the system control MI-COM and keep holding the "FF" and "RWD" buttons until the address number (typically, Fc or Fb) appears.
   The address number will be shown in 2 digits in the hours display of the FL display and its data will be shown in 2 digits in the minutes display.



3. Select address "Fc" by pressing the "FF" or "FWD" button if the address "Fc" is not appeared.
4. Choose the data in the address Fc column, that corresponds to the model number you are working on, from the following list. Set the chosen data value by pressing the "STOP/EJECT" or "PLAY" button.

MODEL	MODEL CODE	ADDRESS			
		Fc	Fd	FE	FF
VS-G280EA	00408170	70	81	40	00
VS-G280EDG	00cF88F0	F0	88	cF	00
VS-G280EK	00c08070	70	80	c0	00
VS-G280EO	00cc80F0	F0	80	cc	00
VS-G280ES	004F80F0	F0	80	4F	00
VS-G281SEG	03cc80b2	b2	80	cc	03
VS-G285EA	0040A178	78	A1	40	00
VS-G286EO	03cc80F8	F8	80	cc	03
VS-G290EM	00cF80F1	F1	80	cF	00
VS-G291EO	03Ec92b8	b8	92	Ec	03
VS-G293EM	00cFA0F1	F1	A0	cF	00
VS-G295EK	00c09278	78	92	c0	00
VS-G296EDG	03cFA8F8	F8	A8	cF	03
VS-G296EO	03Ecb2F8	F8	b2	Ec	03
VS-G296SEG	03ccb2bA	bA	b2	cc	03
VS-G297EK	01E092F8	F8	92	E0	01
VS-G480EA	00408150	50	81	40	00
VS-G480EDG	00cF88d0	d0	88	cF	00
VS-G481SEG	03cc80dA	dA	80	cc	03
VS-G485EA	0043A158	58	A1	43	00
VS-G493EM	00cFA0d1	d1	A0	cF	00
VS-G496EDG	03cFA8d8	d8	A8	cF	03
VS-G496EO	03Ecb2d8	d8	b2	Ec	03
VS-G496SEG	03ccb2dA	dA	b2	cc	03
VCR1638NE	038496b8	b8	96	84	03
VCR3008CE	038484b0	b0	84	84	03
VCR3008NE	038484b0	b0	84	84	03
VCR3018CE	038496b8	b8	96	84	03
VCR3018NE	038496b8	b8	96	84	03
VCR4008NE	038484b0	b0	84	84	03
VCR4018NE	038496b8	b8	96	84	03
VCR6158NE	038484b0	b0	84	84	03
VCR6258NE	038496b8	b8	96	84	03
VO-28SEG	038c84b2	b2	84	8c	03
VO-48SEG	038c84dA	dA	84	8c	03
VCR3048CE	03A496d8	d8	96	A4	03

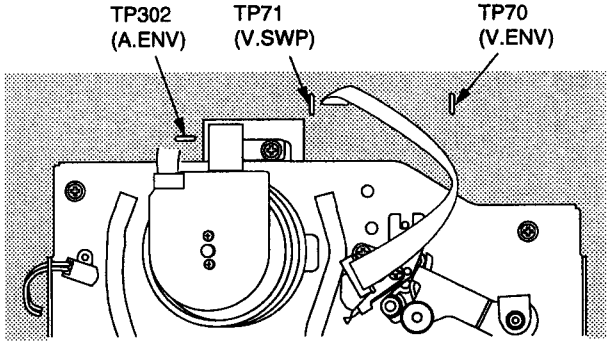
(On the FL display, B, C and D are indicated with small letters.)

5. Memorize the data into the EEP ROM IC by pressing the "REC" button.
6. The address "Fd" and its data will be shown in the FL display approx 2 seconds later automatically. Repeat the presetting (steps 4 to 5) for addresses "Fd", "FE" and "FF" in the same manner as address "Fc".
7. Reset the system control MI-COM to disengage the model code preset mode.

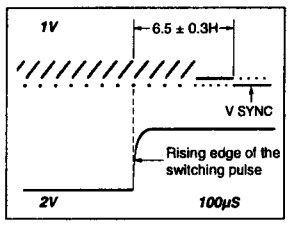
NOTE : This model code preset is absolutely necessary when the IC404 (EEP-ROM) on the MAIN PCB is replaced.

3) Video switching point preset

1. Engage the "test mode" and press the "POWER" button.
2. Connect CH-1 of an oscilloscope to VIDEO OUT and CH-2 to the TP71 (V-SWP) on the MAIN PCB for triggering.



3. Play back the reference tape TF-530RFS (Part No. : AT-751775). Check the channel display of the FL display so that "1F" (center position in the tracking range) is indicated at this point. If not indicated, press the "<" or ">" button on the remote control until "1F" is indicated.
4. Press the "REC" button during playback.
5. Confirm that the switching point is positioned 6.5 ± 0.3 H before the left edge of the V-sync as shown.



NOTE:

a) Make sure that the A/C head phase adjustment has been adjusted correctly before making video switching point preset. (Refer to step 4-3)

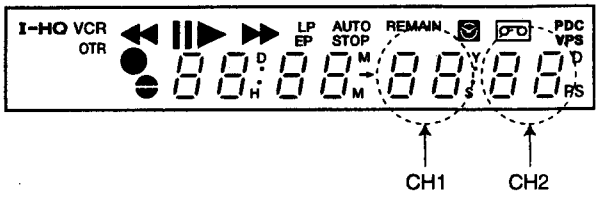
b) This switching point preset is absolutely necessary after the folllowing replacements.

- When the video head Assy is replaced.
- When the DRUM MOTOR PCB is replaced.
- When the SERVO/SYSCON MI-COM or EEP ROM IC (IC404) on the MAIN PCB is replaced.

4) Memorization of the reference RF envelope detect voltage (I-HQ)

For correct operation of the I-HQ tape tuning system, memorization of the reference RF envelope detect voltage is absolutely necessary. When the VIDEO HEAD Assy or EEP ROM IC (IC404) in the MAIN PCB is replaced for any reason, memorize the reference RF envelope detect voltage according to the following procedure.

1. Engage the test mode.
2. Turn the VCR power ON.
3. Insert the I-HQ test tape "TF-556AT" (AT-751822J) and then select the "FEATURE" mode in the menu screen. Input a colour bar signal to the VIDEO IN terminal then perform "T.TUNING" by using the remote control. Observe the seconds (CH1) and channel (CH2) display so that "- -" and "- -" should not be displayed in neither the SP nor LP modes after the tape tuning has completed. If "- -" and "- -" are displayed, perform tape tuning again until a satisfactory result is obtained.



4. Set the tape speed to "SP mode".
5. Make a recording on the I-HQ test tape for more than 1 minute and then rewind it to the point where the recording was started.
6. Play back the tape. Reference RF envelope detect voltage data in the memory is displayed in 2 digits in the minutes display part of the FL display and the present envelope detect voltage data is displayed in 2 digits in the seconds display part (the data is displayed in hexadecimal numbers).
7. After the auto tracking has been activated, press the "CANCEL" button on the remote control unit. So present RF envelope detect voltage data will be transferred to the minutes part's 2 digits and memorized in the EEP ROM IC.
8. Next, set the tape speed to "LP mode" and repeat the steps 5 to 7.
9. Terminate the test mode.

5) Other facilities in the test mode

1. Tracking position display

In the "SP play" mode, tracking position data can be displayed on the FL display. Data is displayed in 64 steps in hexadecimal numbers from "00" to "3F" in the channel display part on the FL display. Pressing the "TV/VCR" button on the remote control unit during playback directly sets the tracking to the maximum "3F" position.

Pressing the "PLAY" button during playback sets tracking to the center position "1F" automatically. If "1F" does not appear even when the "PLAY" button is pressed, keep pressing the "<" or ">" cursor button on the remote control until "1F" is indicated and then press the "OK" button to memorize the position.

2. Suspension of the tape protection system

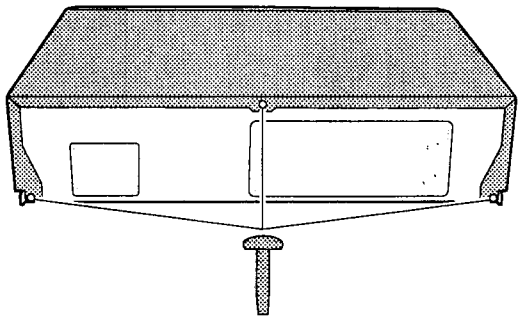
When the VCR is not in the "test mode", the "REC PAUSE" mode will be released after 30 minutes in order to protect the tape. The "STILL" mode will also be released after 5 minutes. During the "test mode", however this tape protection system will not operate.

※ Video head rotation will stop 5 min. after the "REC PAUSE" mode has been engaged even during the test mode.

I. DISASSEMBLY

In case of trouble, etc., necessitating dismantling, please dismantle in the order shown in the illustrations.
Reassemble in the reverse order.
When reattaching the FRONT PANEL, hold the cassette loading slot door in the upright (open) position.

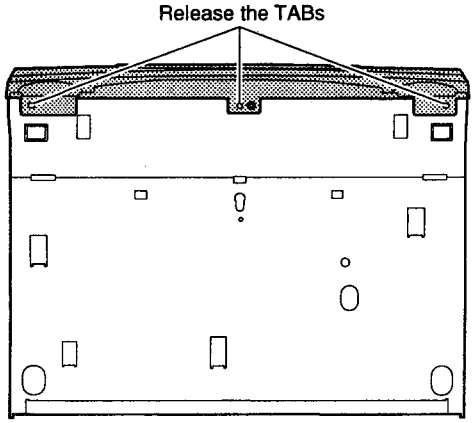
1. Removal of UPPER COVER



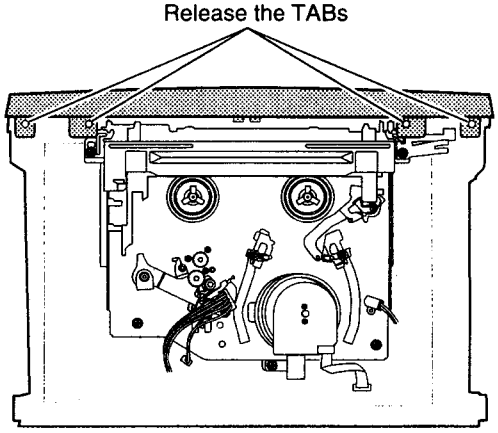
Lift the back part of the UPPER COVER up to remove.

2. Removal of FRONT PANEL

Release the TABs



Release the TABs



II. PRINCIPAL PARTS LOCATION

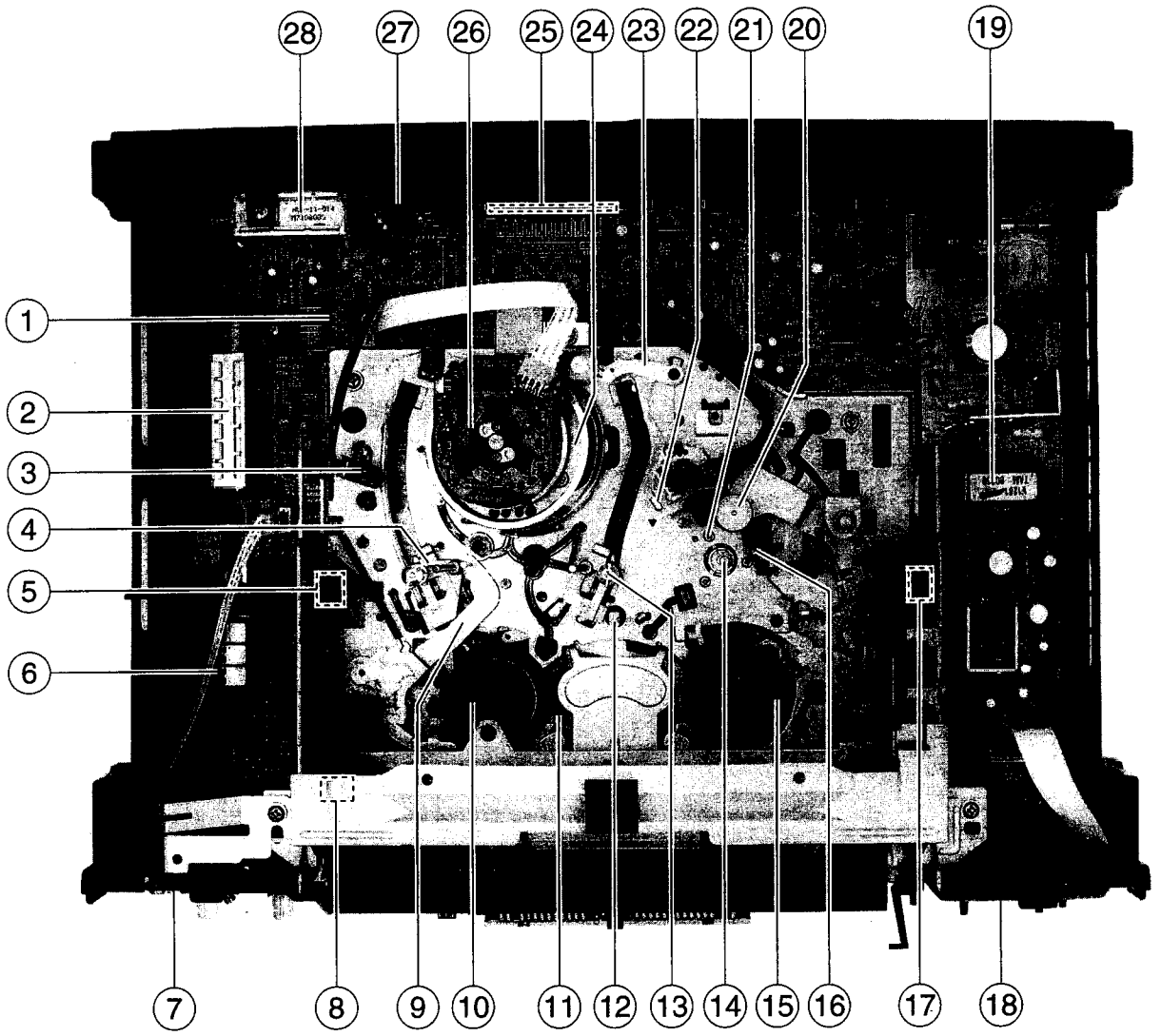


Fig. 2-1 Top view

1. MAIN PCB
2. TUNER UNIT
3. FULL TRACK ERASE HEAD
4. GUIDE LEADER (L) BLOCK
5. TAPE END SENSOR
6. VIF NORMAL PCB (except EDG/SEG models)
   VIF EDG PCB (EDG models only)
   VIF SEG PCB (SEG models only)
7. FRONT INPUT PCB (285/485EA, 293/493EM, 296EDG/EO/SEG, 496EDG/EO/SEG models only)
8. REC SAFETY SWITCH
9. TENSION ARM
10. REEL DISK (S)
11. IDLER ARM PART
12. SENSOR LED
13. GUIDE LEADER (R) BLOCK
14. CAPSTAN MOTOR
15. REEL DISK (T)
16. REVIEW ARM
17. TAPE START SENSOR
18. OPERATION PCB (AKAI models only)
    OPERATION (OEM) PCB (OEM models only)
19. PULSE POWER TRANSFORMER
20. PINCH ROLLER ARM
21. TAKE UP TAPE GUIDE
22. A/C (AUDIO/CONTROL/SIDE TRACK ERASE) HEAD
23. HEAD CLEANER BLOCK
24. ROTARY HEAD BLOCK
25. SCART SOCKET PCB (except EA, EM, ES,280EDG/EK/EO, 295EK & 480EDG models)
26. DRUM MOTOR PCB
27. REAR RCA PCB (EA, EM & ES models only)
28. RF CONVERTER/BOOSTER UNIT

※ The photograph on this page is of model VS-G493EM

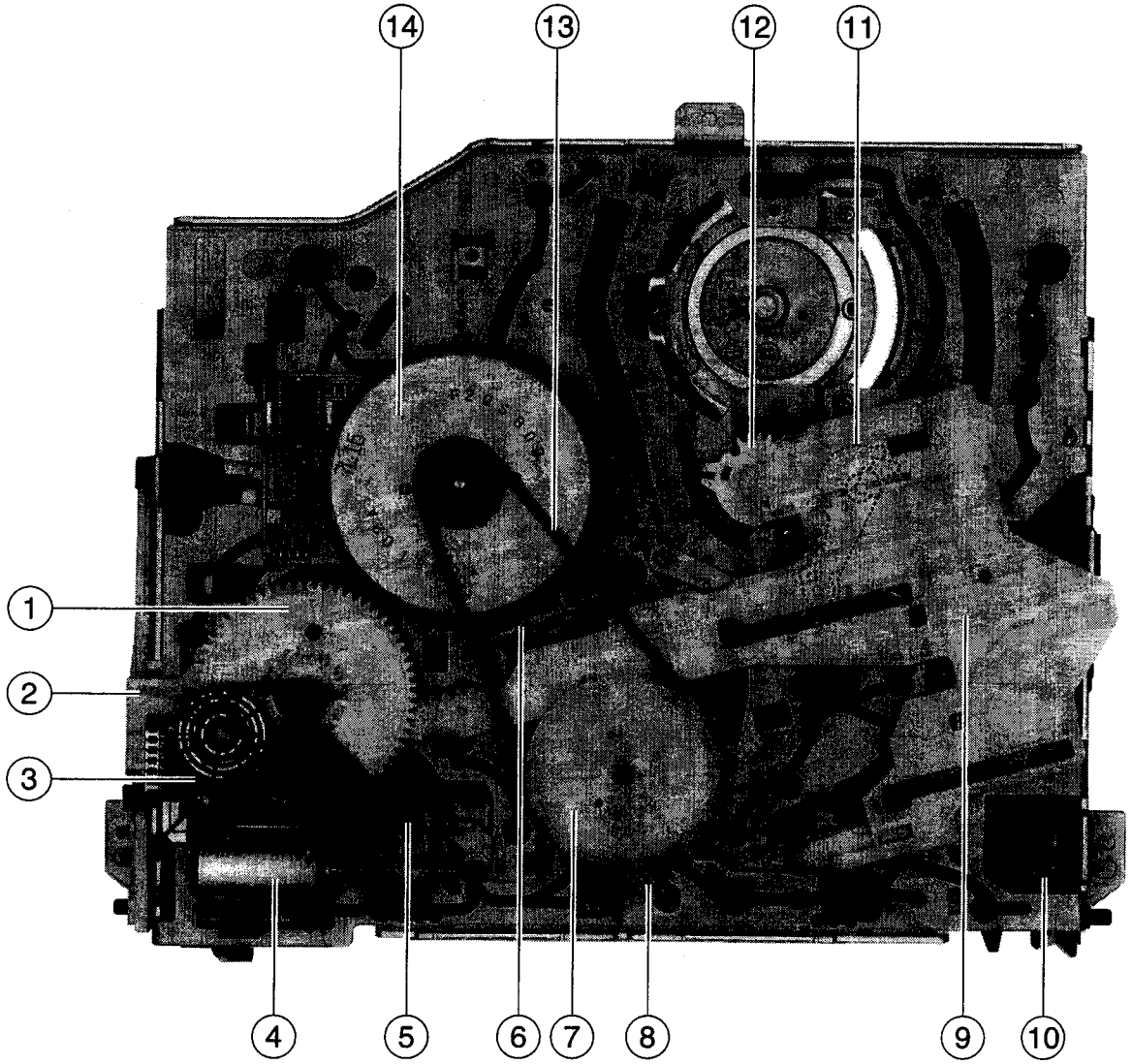


Fig. 2-2 Bottom view of the mechanism block

1. CENTER CAM GEAR
2. LOADING SLIDE
3. MODE DETECT SWITCH
4. LOADING MOTOR
5. WHEEL GEAR
6. SLOW ARM BRAKE
7. CLUTCH DISK PART
8. COUPLING ARM
9. MAIN SLIDER
10. LOADING ARM BLOCK
11. TOGGLE LEVER (L)
12. TOGGLE GEAR (R)
13. CAPSTAN BELT
14. CAPSTAN MOTOR BLOCK

III. DISASSEMBLY OF THE MAIN COMPONENTS

3-1. REMOVAL OF THE MECHANISM BLOCK

NOTE: Some parts in the mechanism block require complete removal of the mechanism block from the chassis when performing servicing.
Set the loading mechanism to the "EJECT" position by pressing the "EJECT" button, then disconnect the AC power plug from the AC socket before proceeding. This sets the loading mechanism to the "reference position".

1) Disconnect the flat cable on the DRUM MOTOR PCB as shown in Fig. 3-1.

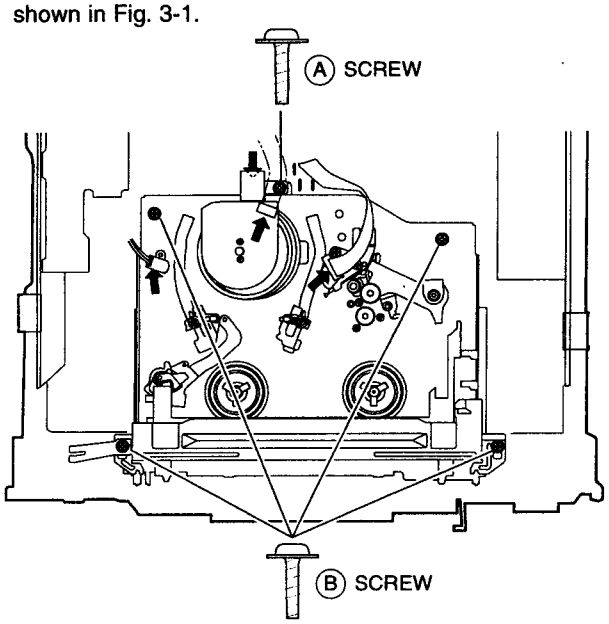


Fig. 3-1

2) Disconnect the connectors on the FULL TRACK ERASE HEAD and A/C HEAD.
3) Remove the Ⓐ screw and shield cover then disconnect the flat cable carefully.
4) Remove the four Ⓑ retaining screws and remove the MECHANISM BLOCK.

3-2. REMOVAL OF THE EJECTOR BLOCK

3-2-1. Removal of the CASSETTE HOLDER BLOCK

1) Remove the UPPER CHASSIS by pushing the Ⓐ part in the direction of the arrow while pressing the STOPPER, as shown in Fig. 3-2.

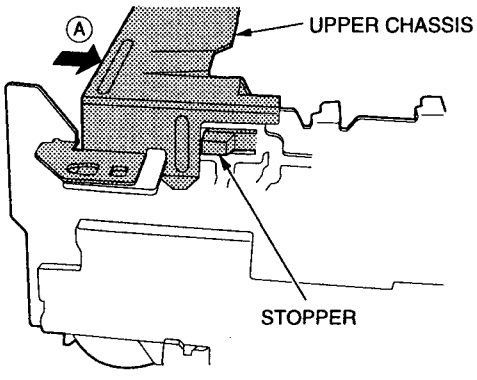


Fig. 3-2

2) Disengage the right end of the CASSETTE HOLDER BLOCK from its rail while pulling the STOPPER outwards.

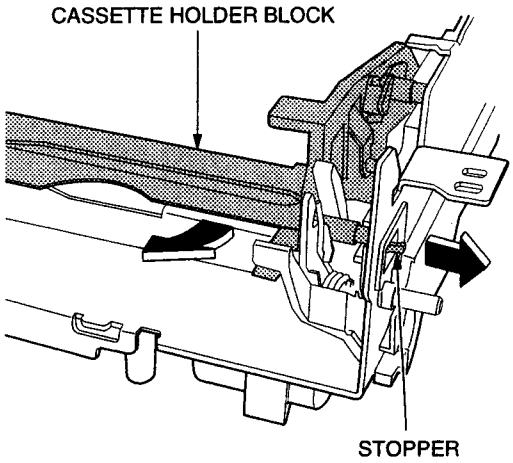


Fig. 3-3

3) Carefully pull the CASSETTE HOLDER BLOCK in the upper right direction and remove it from the mechanism block.

3-2-2. Removal of the LOADING ARM BLOCK

1) Connect a 6 V battery to the LOADING MOTOR or turning the LOADING MOTOR shaft manually, position the LOADING ARM to about 30° from vertical, as shown in Fig. 3-5.

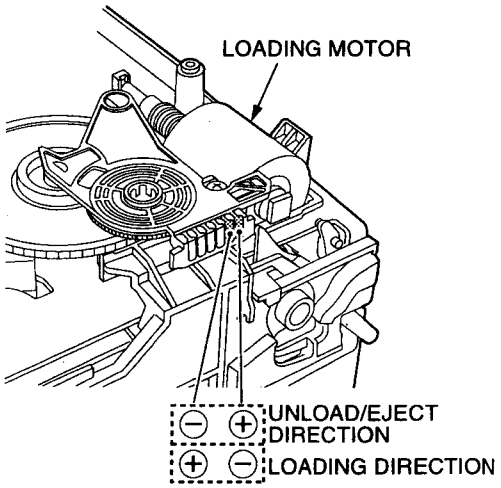


Fig. 3-4

NOTE: To avoid adding excessive stress to the mechanism, the voltage should not exceed 6V when connecting a battery to the LOADING MOTOR.

2) While pulling the left side STOPPER outwards, pull out the left end of the LOADING ARM from the bracket and remove the LOADING ARM BLOCK from the mechanism as shown in Fig. 3-5.

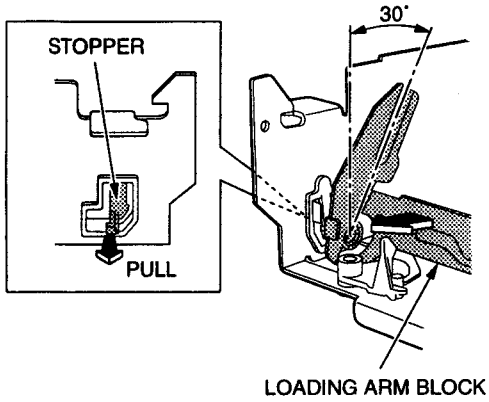


Fig. 3-5

3) Re-assemble in the reverse order for installation. Re-position the LOADING ARM angle to the reference (EJECT) position before attaching the CASSETTE HOLDER BLOCK.

3-3. DISASSEMBLY OF THE LOADING DRIVE BLOCK

3-3-1. Removal of the LOADING MOTOR and MODE DETECT SWITCH

1) Remove the retaining screw then turn the LOADING MOTOR BLOCK in the direction of the arrow while releasing the Ⓐ and Ⓑ hooks, as shown in Fig. 3-6.

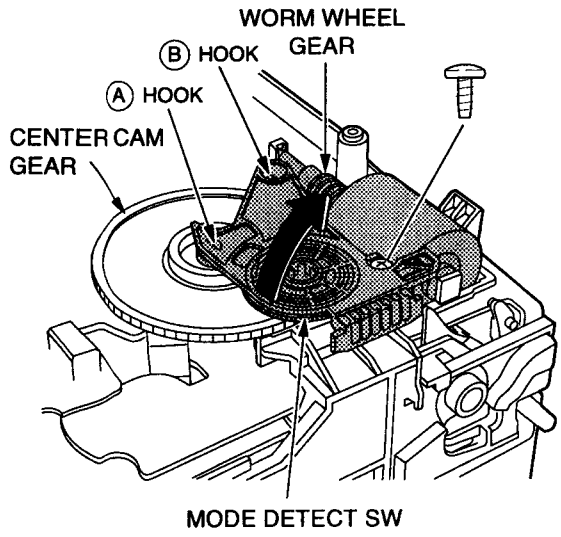


Fig. 3-6

2) Press the lower side of the LOADING MOTOR in the direction of the arrow and then remove the LOADING MOTOR BLOCK (shown in Fig. 3-7) taking care not to damage the Ⓐ part.

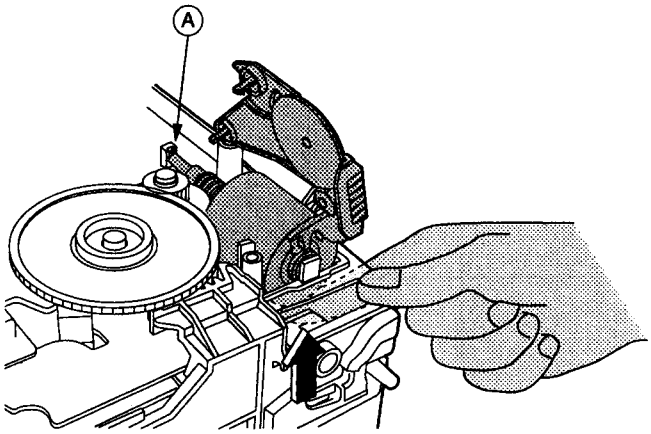


Fig. 3-7

3-3-2. Removal of the MAIN SLIDER

1) Remove the LOADING MOTOR BLOCK and CENTER CAM GEAR.
2) Remove the CAPSTAN BELT and CLUTCH DISK PART (carefully release the stopper on the shaft when removing).

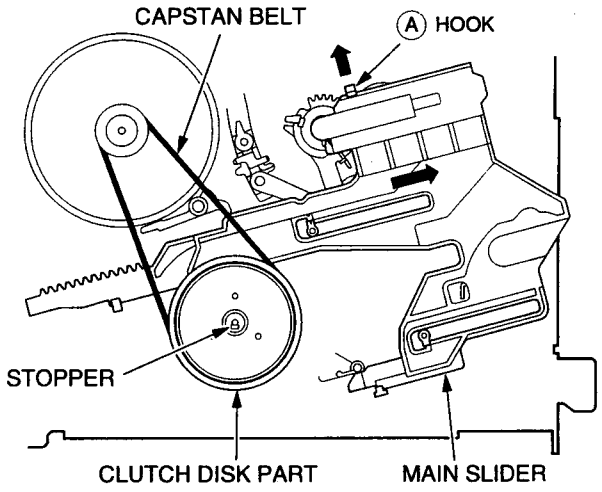


Fig. 3-8

3) Slide the MAIN SLIDER in the direction of the arrow and pull out the MAIN SLIDER while carefully releasing the Ⓐ hook, as shown in Fig. 3-8.

3-3-3. Removal of the TOGGLE GEAR (R) and TOGGLE LEVER (L)

1) First disengage the TOGGLE LEVER (L)'s lever from the GUIDE LEADER (L)'s pin then release the stopper on the TOGGLE LEVER (L), as shown in Fig. 3-9.

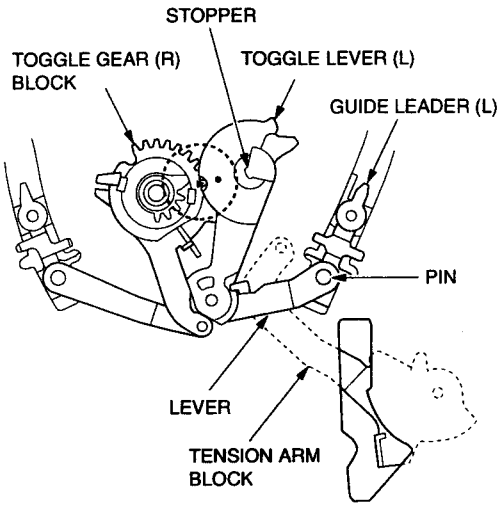


Fig. 3-9

2) Remove the TOGGLE LEVER (L) and TOGGLE GEAR (R).

3-4. REASSEMBLY OF THE LOADING DRIVE BLOCK

3-4-1. Position of the TOGGLE GEAR (R) and TOGGLE LEVER (L)

1) With your fingers, set both the GUIDE LEADERs (R) and (L) and TOGGLE GEAR (R) and TOGGLE LEVER (L) to the unloaded position. Align the mark on the TOGGLE LEVER (L) and ► mark on the TOGGLE GEAR (R), as shown in Fig. 3-9.

NOTE: Before positioning the TOGGLE LEVER (L), confirm that the TENSION ARM is positioned as shown by the dotted line in Fig. 3-9.

3-4-2. Installation of the MAIN SLIDER

1) Position the TENSION ARM LEVER and SUPPLY BRAKE's pin as shown by the dotted line respectively and then slide the MAIN SLIDER a little to the left along the three guides, as shown in Fig. 3-10.

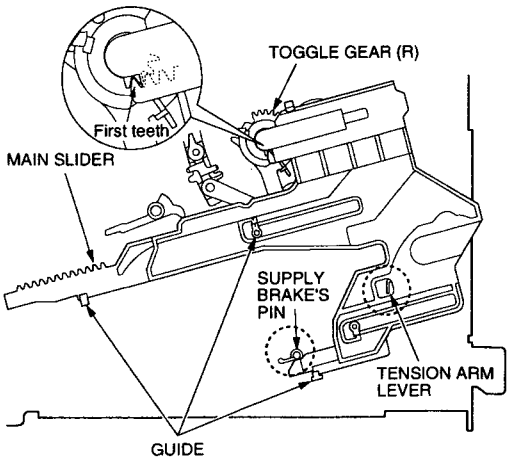


Fig. 3-10

2) Align the TOGGLE GEAR (R) timing so that the first teeth of the MAIN SLIDER align between the first and second tooth of the TOGGLE GEAR (R). Engage the HOOK and the MAIN SLIDER by pressing the MAIN SLIDER (near the HOOK) downwards.
3) Attach the CLUTCH DISK PART and CAPSTAN BELT.

3-4-3. Installation of the CENTER CAM GEAR

1) Fully slide the MAIN SLIDER to the right (unloaded position).

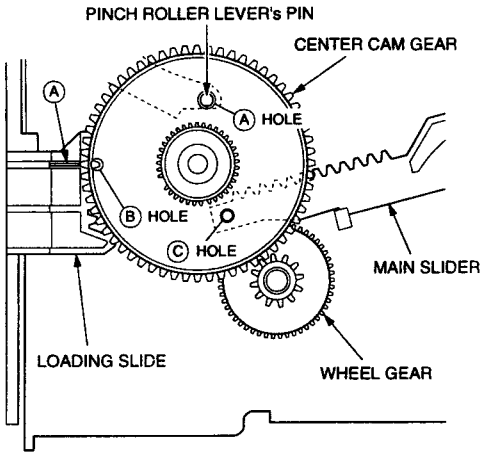


Fig. 3-11

2) Attach the WHEEL GEAR.
3) Attach the CENTER CAM GEAR so that the pin on the PINCH ROLLER LEVER is visible through the Ⓐ hole on the CENTER CAM GEAR as well as the LOADING SLIDE's Ⓐ part aligns with the Ⓑ hole on the CENTER CAM GEAR as shown in Fig. 3-11.

3-4-4. Installation of the LOADING MOTOR and MODE DETECT SWITCH

1) Carefully insert the LOADING MOTOR (with the MODE DETECT SWITCH attached) to the motor holder on the chassis and turn the LOADING MOTOR in the opposite direction of the arrow, shown in Fig. 3-6).
2) Align the hollow teeth of the CENTER CAM GEAR with the trapezoidally shaped teeth of the MODE DETECT SWITCH as shown in Fig. 3-12 then tighten the retaining screw.

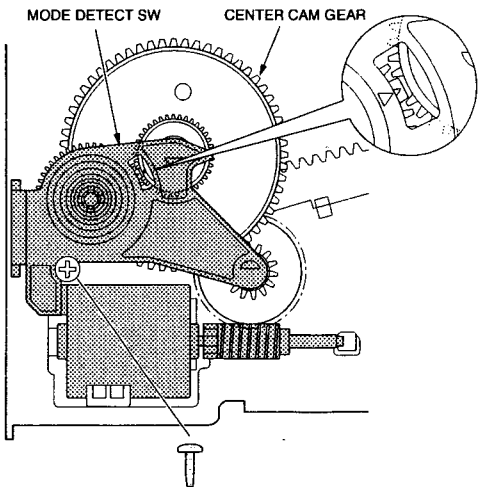


Fig. 3-12

3-5. REPLACEMENT OF THE CAPSTAN MOTOR BLOCK

1) Remove the three retaining screws on the top. Next, turn the mechanism block upside down then remove the CAPSTAN BELT.
2) Remove the CAPSTAN MOTOR BLOCK from the chassis carefully.

3-6. DRUM MOTOR PCB REPLACEMENT

1) Remove the two retaining screws on the DRUM MOTOR PCB, as shown in Fig. 3-13.

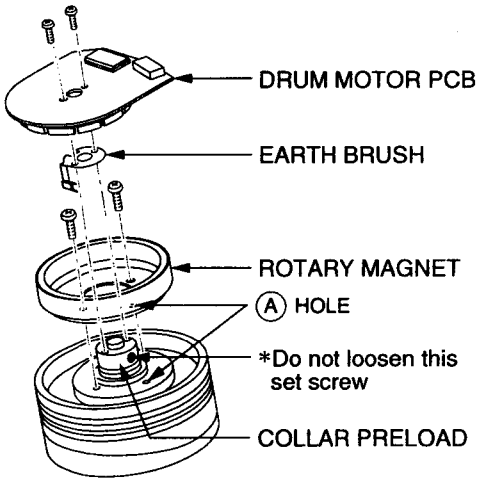


Fig. 3-13

2) If removal of the ROTARY MAGNET is necessary, first remove the EARTH BRUSH then remove the two ROTARY MAGNET retaining screws.
3) When reattaching the ROTARY MAGNET onto the UPPER DRUM of the VIDEO HEAD BLOCK, the Ⓐ hole must align with the Ⓐ hole on the UPPER DRUM.
4) Perform PB switching point adjustment (INFORMATION, PRESETS IN THE TEST MODE step 3)) after replacement of the ROTARY MAGNET or DRUM MOTOR PCB.

3-7. VIDEO HEAD BLOCK REPLACEMENT

3-7-1. VIDEO HEAD BLOCK replacement

※ Can not be replaced Upper Drum itself, replace whole Video Head Block.

1) Remove the DRUM MOTOR PCB, EARTH BRUSH and ROTARY MAGNET (refer to step 3-6).
2) Remove the three retaining screws on the bottom.

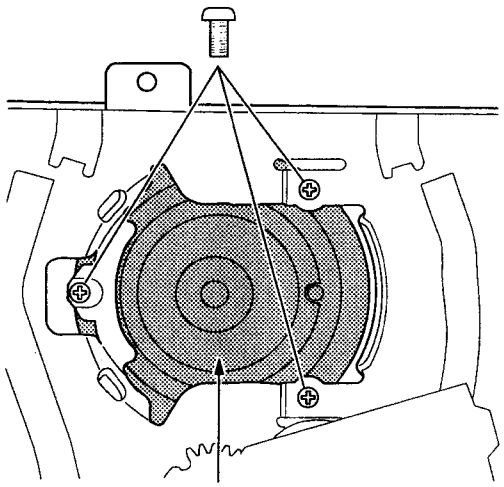


Fig. 3-14

NOTE:

1) Because the video head tips are fragile, take special care when handling the VIDEO HEAD BLOCK.
2) Height precision is required for proper performance. the following points should be noted when replacing the VIDEO HEAD BLOCK.
   a) Do not loosen the set screws on the COLLAR PRELOAD (refer to Fig. 3-13).
   b) Before replacement, use alcohol to clean both surfaces where the LOWER DRUM touches the chassis.
   c) Tighten the three retaining screws alternately and gradually.

3-7-2. After replacement

After replacement, the following adjustments are necessary for proper performance.

1) GUIDE LEADER height adjustment (MECHANICAL ADJUSTMENT 4-2-5).
2) CONTROL HEAD phase adjustment (MECHANICAL ADJUSTMENT 4-3).
3) PB switching point adjustment (INFORMATION, PRESETS IN THE TEST MODE step 3)).
4) I-HQ PRESET (INFORMATION, PRESETS IN THE TEST MODE step 4)).

IV. MECHANICAL ADJUSTMENT

4-1. BACK TENSION CONFIRMATION

1) Using a video cassette tape which you no longer need, remove both tape reels and the tape protection cover. Next, cover the video cassette's left and right detection holes with black adhesive tape.
2) Engage the playback mode using the tapeless cassette.
3) Confirm the distance between the three marks (line) on the TENSION ARM and the reference BOSS on the MECHA. CHASSIS so that the center of the reference BOSS aligns with the center line on the TENSION ARM, as shown in Fig. 4-1.
4) If the result is not satisfactory, eject the cassette tape and adjust the back tension with a flat head screwdriver, as shown in Fig. 4-1, until a satisfactory result is achieved.

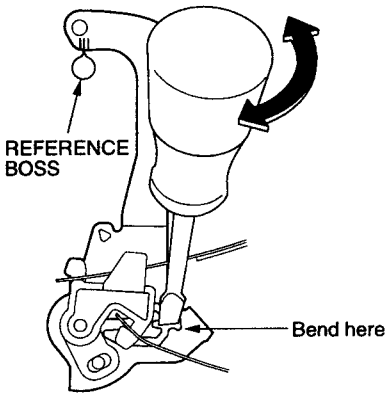


Fig. 4-1

4-2. TAPE TRANSPORT ADJUSTMENTS

NOTE: The following adjustments are required only when an irregularity is found, since these adjustments are precisely set at the factory.

4-2-1. Tape curl adjustment at the TAKE UP TAPE GUIDE

1) Play back a recorded tape which is no longer needed.
2) Turn the Ⓐ screw on the A/C HEAD BLOCK until the edge of the tape barely touches the lower part of the TAKE UP TAPE GUIDE, without any curl or wrinkle. (Turning the Ⓐ screw in the clockwise direction moves the tape downwards and counterclockwise direction moves the tape upwards.

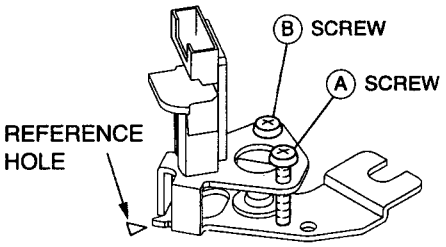


Fig. 4-2

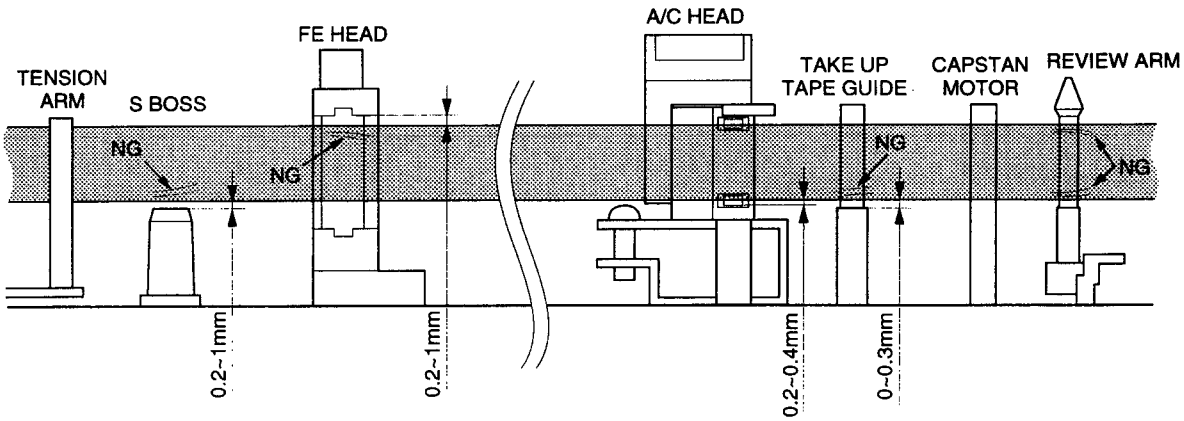


Fig. 4-3

3) Connect an oscilloscope to the AUDIO OUT terminal and play back the test tape TF-526HH (part No.: AT-751788).
4) Confirm that the output level is between 30 ~ 200 mVp-p (optimum value is 100 mVp-p). If the result is not satisfactory, finely adjust the Ⓐ and Ⓑ screws alternately until a satisfactory result is achieved.

IMPORTANT:

1) In order to prevent the A/C HEAD BASE from being distorted, and to keep the A/C HEAD straight up, always turn the head azimuth adjustment Ⓑ screw equally in the opposite direction to the Ⓐ screw.
2) Never turn the Ⓐ screw in the clockwise direction too much as it will cause the A/C HEAD BASE to bend.
3) Once the Ⓐ screw is adjusted, A/C HEAD azimuth adjustment is required for proper performance. (Refer to 4-2-4, A/C HEAD azimuth adjustment)
4) To make the adjustment easier, prepare a cassette tape with the protection cover removed.

4-2-2. Tape curl adjustment at the S-BOSS or FULL TRACK ERASE HEAD

1) Play back the protection cover-less cassette tape which you prepared.
2) Confirm that the edge of the tape is not touching the S-BOSS or upper flange of the FULL TRACK ERASE HEAD, as shown in Fig. 4-3. If the result is not satisfactory, bend the neck part of the TENSION ARM in the Ⓐ or Ⓑ direction slightly until a satisfactory result is achieved.

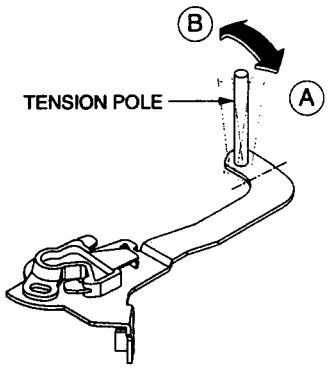


Fig. 4-4

3) Set the VCR to the "CUE" or "REVIEW" mode and confirm that the edge of the tape is not touching the S-BOSS or upper flange of the FULL TRACK ERASE HEAD. If the result is not satisfactory, readjust the TENSION ARM again.

4-2-3. CUE/REVIEW check

1) Play back the end of an E-240 tape and set the unit to the REVIEW mode by pressing the REW button.

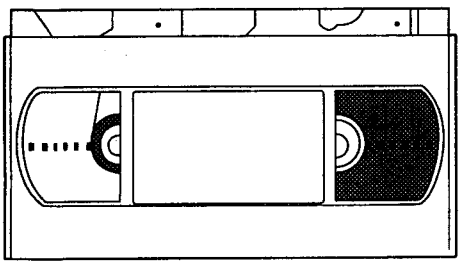


Fig. 4-5

2) After 3 seconds, confirm there is no curl or wrinkle among the TAKE UP TAPE GUIDE, CAPSTAN SHAFT and REVIEW ARM. If the result is not satisfactory, readjust the Ⓐ and Ⓑ screws until a satisfactory result is achieved.
3) Play back the beginning of an E-240 tape and this time set the unit to the CUE mode by pressing the F.FWD button.

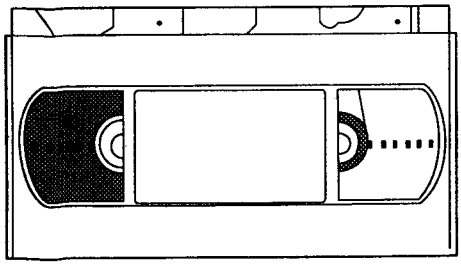
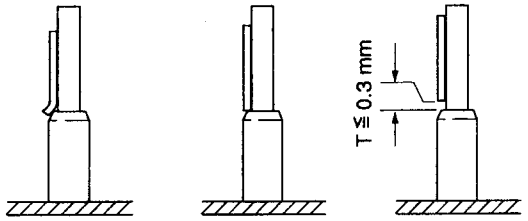


Fig. 4-6

4) Confirm there is no curl or wrinkle among the TAKE UP TAPE GUIDE, CAPSTAN SHAFT and REVIEW ARM. If curl or wrinkle occurs, slightly turn the Ⓐ screw until it disappears.
5) Set the unit to the REVIEW mode again. Then confirm that there is no curl or wrinkle near the TAKE UP TAPE GUIDE. (A small gap may appear after this adjustment, but this is allowable.)



(a) INCORRECT (b) CORRECT (c) CORRECT

Fig. 4-7

NOTE:

1) If the result is not satisfactory, repeat the adjustment until a satisfactory result is obtained.
2) Always play an undamaged tape to obtain satisfactory adjustment.
3) Because an E-240 tape can be damaged easily due to its thinness, pre-adjustment with an E-180 tape is recommendeed.

4-2-4. A/C HEAD azimuth adjustment

1) Connect an AC milli-voltmeter or an oscilloscope to the AUDIO OUT terminal on the rear panel.
2) Play back the reference tape TF-530RFS (Part No.: AT-751775).
3) Adjust the Ⓑ screw to obtain the maximum audio output (Refer to Fig. 4-2).

4-2-5. GUIDE LEADER height adjustment

1) Slightly loosen the set screw at the lower part of the GUIDE LEADER's (L) and (R) so that the GUIDE LEADER can be adjusted with reasonable tightness.

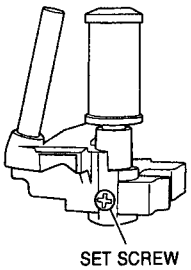


Fig. 4-8

2) Play back the reference tape TF-530RFS.
3) Connect an oscilloscope's CH-1 to the TP70 (V. ENVE) on the MAIN PCB and CH-2 to TP71 (V. SWP) for triggering. (Refer to "video switching point preset" on page 7 for location.)
4) Press the tracking button on the remote control to obtain the maximum RF envelope level.

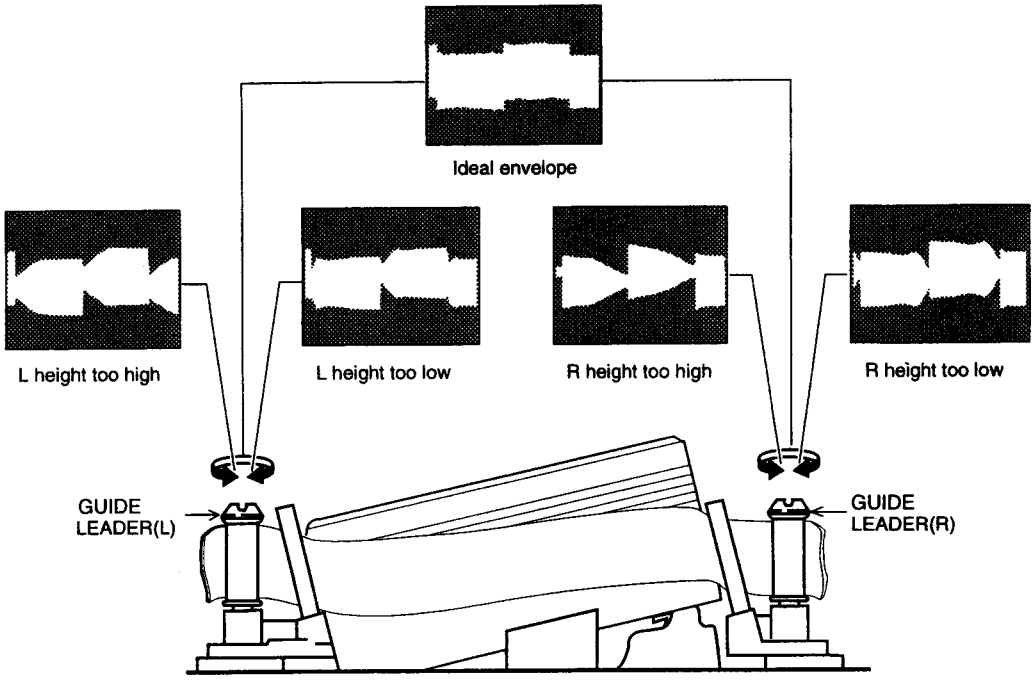


Fig. 4-9

5) Turn both the GUIDE LEADER's heads alternately with a flat head (—) screwdriver to obtain a flat RF envelope as the ideal envelope, as shown in Fig. 4-9.
6) After adjustment is completed, tighten the loading leader set screws.

4-3. A/C HEAD PHASE ADJUSTMENT

1) Connect an oscilloscope's CH-1 to the TP70 (V. ENVE) on the MAIN PCB and CH-2 to TP71 (V. SWP) for triggering. (Refer to "video switching point preset" on page 7 for location.)
2) Play back the reference tape TF-530RFS (Part No. : AT-751775).
3) Press the ">" or "<" TRACKING button on the remote control until the "X" mark can be seen in the center position of the tracking range on the TV screen as shown in Fig. 4-10.
4) Loosen the © screw slightly so that the A/C HEAD BASE can be moved with reasonable tightness.
5) Insert a philips type screwdriver into the Ⓐ hole on the chassis through the A/C HEAD BASE's wane.
6) Move the A/C HEAD BASE by moving the screwdriver in the direction of the arrow, as shown in Fig. 4-11, to obtain the maximum RF output, then tighten the © screw. Although there are a few points at which the RF output becomes maximum, the pointed head of the A/C HEAD BASE must be positioned as close to the reference hole as possible.
7) Eject the tape and then re-insert it and play it back again. Confirm that the RF output is maximum after the auto tracking control has been activated. Next, press the "<" or ">" button on the remote control alternately and confirm that the RF output is maximum at the center tracking position. If the result is not satisfactory, repeat steps 2) to 6). (This adjustment is very important as this affects the interchangeability of recorded tapes.)

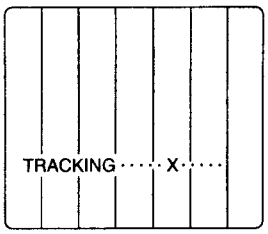


Fig. 4-10

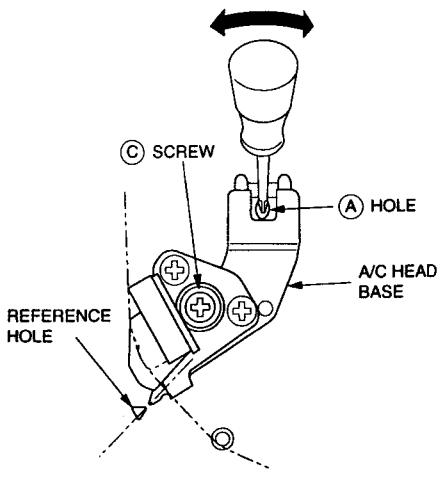


Fig. 4-11

V. PARTS LIST

ATTENTION

1. When placing an order for parts, be sure to list the Part No., Model No. and the description of each part. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.
2. Please make sure that Part No. is correct when ordering. If not, a part different from the one you ordered may be delivered.
3. Since the parts shown in Parts List or Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.

a) Mechanism Block

2. HEAD BASE BLOCK

Ref. No.	Part. No.	Description
1	BH-T2023A320A	HEAD BASE BLOCK
2	HP-H2206A010A	HEAD R/P PR4-8FU C
3	ZS-477876	PAN20↔03STL CMT
4	ZS-536488	BID20↔08STL CMT
5	ZG-402895	SP CS ANGLE ADJUST

SP (Service Parts) Classification

This number corresponds with the individual parts index number in the figure.

b) PC Board

2. MAIN PC BOARD

Ref. No.	Part. No.	Description
IC1	EI-324536	IC HD14049BP
IC2	EI-336801	IC MB8841-564M
C1A	EC-338399	C MMY V 223M 250AC [U,E,B,S]
C1B	EC-350949	C MMY V 223M 250DC [J]
C1C	EC-338397	C MMY V 223M 125AC [C,A]
X1	EI-318384	OSC X'TAL NC-18C

Symbols for primary destination
[A] : AAL (U.S.A) [S] : SAA (Australia)
[B] : BEAB (England) [U] : U/T (Universal Area)
[C] : CSA (Canada)
[E] : CEE (Europe) [V] : VDE (Germany)
[J] : JPN (Japan) [Y] : Custom

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No. listed at right of Part No.

WARNING

⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT

⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉDE L'APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LÉ FABRICANT.

1. RECOMMENDED SPARE PARTS

We suggest you to stock the following Recommended Spare Part items listed below since they can cover most of the routine service.

Ref. No.	Part No.	Description
1	BL-438155C	ARM LOADING(2) BLK
2	BL-433609N4	ARM PINCH BLK
3	BM-433593N1	LOADING MOTOR PART
4	BM-438348C	MOTOR F2QSB
5	BM-433198T	MOTOR F20EL60
6	⚠ BT-438373C	TRANS POW V1281-EM [EM ONLY]
7	⚠ BT-438422C	TRANS POW V1285-EO [EXCEPT EM]
8	BV-433615N8	HOLDER CASSETTE BLK
9	BV-V1234D430A	TL DRUMBLK(SERVICE)NX-2PAL-1 [2 HEADS : G291EO & OEM ONLY]
10	BV-V1234D430E	TL DRUMBLK(SERVICE)NX-2PAL-2 [2 HEADS : EXCEPT G291EO & OEM]
11	ED-390011C	D LED GL451 INFRARED
12	ED-390012C	D LED GL4800 INFRARED
13	⚠ ED-438389C	D SC.ERA82-004 T05 0.6A
14	ED-435478C	D SCHOTTKY ERC81-004J10 S12
15	⚠ ED-436213C	D SILI.ERA2210AVRB T051000/0.5
16	ED-435728C	D SILI.H ERD32-02J6 S12 200/3A
17	ED-416930C	D SILICON C.MA77-TX TXT08E
18	ED-307573C	D SILICON H 1SS131T-77 T26
19	⚠ ED-428420C	D SILICON RL103F-N02T05 200/1A
20	ED-403280C	D SILICON 1N4002N02 T05 100/1A
21	⚠ ED-418622C	D SILICON 1N4006N02 T05 800/1A
22	ED-434522C	D ZENER H MTZJ10C T26
23	ED-439308C	D ZENER H MTZJ15C T26 [EXCEPT EA]
24	ED-427618C	D ZENER H MTZJ33A T26 [EXCEPT EA]
25	ED-422519C	D ZENER H MTZJ4.3B T26
26	ED-418820C	D ZENER H MTZJ5.1C T26
27	ED-418918C	D ZENER H MTZJ8.2B T26
28	ED-427719C	D ZENER H MTZJ9.1A T26
29	⚠ EF-438424C	FUSE V 491 T05 60V 2.0A
30	⚠ EF-394702C	FUSE 218 TIME 250V 2.00A
31	EI-439673C	IC BA4558F-E2 FPE2T12E
32	EI-438372C	IC BA6956N
33	EI-438383C1	IC BU4052BCF E2 FPE2T16E [2 SCART SOCKET MODEL ONLY]
34	EI-438248C	IC KA78L09AZ T05
35	EI-435270C	IC LA70001M-TRM FPR T24E [2 HEADS ONLY]
36	EI-435229C	IC LA70011M-TRM FPR T24E [4 HEADS ONLY]
37	EI-438400C	IC LA71507ML
38	EI-438382C	IC LA7151M TP-T1 FPR T32P [2 SCART SOCKET MODEL ONLY]
39	EI-432899C	IC LA7337 [SEG ONLY]
40	EI-435272C	IC LC89978M-TE-R FPR T16E
41	EI-439537C	IC M37777MAA3A3GP VXGSYFS1 [EXCEPT EA/EDG/EK]
42	EI-439538C	IC M37777MAA3A4GP VXGSYVS1 [EA ONLY]
43	EI-439447C1	IC M37777MAA3A6GP VXGSYFV3 [EK ONLY]
44	EI-439616C	IC M37777MAA3A8GP VXGSYFR1 [EDG ONLY]
45	EI-368809C	IC M51496P
46	EI-435187C	IC S-806H-Z TO-92 T05
47	EI-439114C	IC SDA5650XGEG FP T24E [VPS OR PDC MODELS ONLY]
48	EI-435189C	IC STV6400D-TR FPTRT24E [2 SCART SOCKET MODEL ONLY]
49	⚠ EI-422128C	IC TA76431S T05
50	EI-437235C	IC TA8865BN
51	EI-438399C	IC TC90A24F-303 FPL T16E [EXCEPT EDG]
52	EI-439617C	IC TC90A24F-305 FPL T16E [EDG ONLY]
53	EI-337530C	IC UPC574J [EA ONLY]
54	EI-422145C	IC UPD16312GB-3B4
55	EI-431275C	IC 24LC04BT/SN FP T12E
56	EI-437238C	OSC CE CSB503F30
57	EI-368829C	OSC CE CSB512P
58	EI-425240C	OSC X'TAL APS1011A 16.000MHZ
59	EI-431006C	OSC X'TAL HC-49U GX 3.579545MH
60	EI-430836C	OSC X'TAL HC-49U L20 4.433619M
61	EI-438488C	OSC X'TAL VT-200 32.768KHZ
62	EM-438397C	IND FL FV758G
63	EO-438432C	COIL OSC1 6183A 70.0KHZ
64	⚠ ER-418648C	R FUSE V T05 RF25SCVTP1/4WR24K
65	⚠ ER-400729C	R FUSE V T05 RF25SCVTP1/4WR47K
66	⚠ ER-435803C	R FUSE V T05RF25SVTP 1/4W 8R2J
67	ES-433183C	SW MICRO MPU10390MLB0
68	ES-433595N	SW MODE SELECTOR MMS00340ZMB0
69	ES-433200C	SW TACT TSTD-2 T05
70	ET-428361C	DETECTOR GP1U281X
71	⚠ ET-422113C	PHOTO COUPLER PS2561-1-V
72	ET-433976C	TR C.DTA114TKA T146T08E [EXCEPT EA/EK]
73	ET-437201C	TR C.DTA143TKA T146T08E [EXCEPT OEM]
74	ET-429896C	TR C.DTA144EKA T146T08E
75	ET-429899C	TR C.DTA144TKA T146T08E [SEG ONLY]
76	ET-430868C	TR C.DTC114EKA T146T08E
77	ET-433072C	TR C.DTC114TKA T146T08E [EXCEPT EA/EM/ES]
78	ET-428400C	TR C.DTC143EKA T146T08E
79	ET-429897C	TR C.DTC144EKA T146T08E [4 HEADS ONLY]
80	ET-433071C	TR C.DTC144TKA T146T08E
81	ET-438353C	TR C.2SB1198K Q,R T146T08E
82	ET-416932C	TR C.2SB709A R,S TXT08E
83	ET-432740C	TR C.2SC2480 T,S TXT08E
84	ET-438352C	TR C.2SD1782K Q,R T146T08E
85	ET-416933C	TR C.2SD601A R,S TXT08E
86	ET-364084C	TR DTA143ES T05 [2 SCART SOCKET MODEL ONLY]
87	ET-364291N	TR DTA144ES T05
88	ET-362842C	TR DTC143TS T05
89	ET-368786C	TR DTC143ZS T05 [EXCEPT EM]
90	ET-361961C	TR DTC144ES T05 [EXCEPT G281/G296SEG, G291EO, OEM-2HEADS]
91	⚠ ET-438349C	TR FET 2SK2769-01MR F111 [EM ONLY]
92	ET-390010C	TR PHOTO PT4800
93	ET-390009C	TR PHOTO PT493F
94	ET-392746C	TR 2SA933AS R,S T05 [EK/EM & OEM ONLY]
95	ET-434246C	TR 2SB1326 Q,R T05 [EXCEPT EM]
96	ET-392663C	TR 2SC1740S R,S T05
97	ET-414816C	TR 2SC2668 Y T05 [EA ONLY]
98	ET-428407C	TR 2SC3616 M,L T05
99	⚠ ET-427539C	TR 2SC4908 LF625 [EXCEPT EM]
100	ET-438425C	TR 2SD1858 P,Q,R T05
101	ET-403869C	TR 2SD2144S U,V T05 [EXCEPT EM]
102	ET-416697C	TR 2SD2396 J,K
103	HE-433151C	HEAD E VTR-1X2ERS11-108
104	HR-435698C3	HEAD ASSY HVUXA1003A
105	HZ-417681N	ROLLER HEAD CLEANER(2) (SG) [EXCEPT EK,G280EO, 4008NE, 6158NE]
106	MB-433627C	BELT CAPSTAN (CH)
107	MI-433579N5	ARM IDLER PART
108	MI-433597N9	DISK CLUTCH PART
109	ML-433586N1	ARM SLOW BRAKE PART
110	ML-433553N1	MAIN BRAKE(L)BLK

Ref. No.	Part No.	Description
111	ML-433546N2	MAIN BRAKE(R)BLK
112	ML-435645N1	SLIDE MAIN(2)
113	MZ-433568N1	GEAR TOGGLE(R)BLK
114	VT-433526N	GUIDE ROLLER PART

2. MECHANISM (1) BLOCK

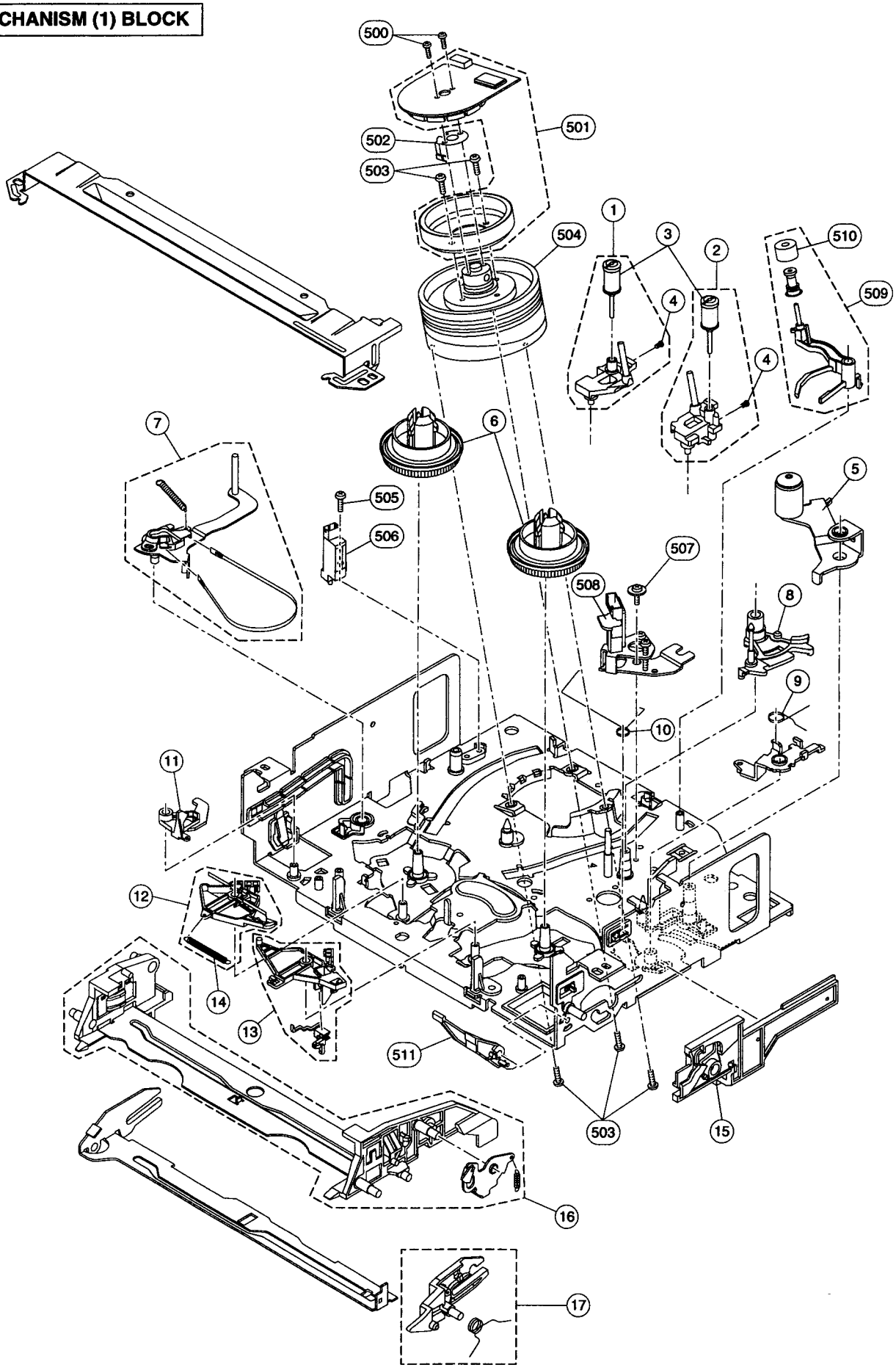
Ref. No.	Part No.	Description
1	BV-433522N2	GUIDE LEADER(L)BLK
2	BV-433534N3	GUIDE LEADER(R)BLK
3	VT-433526N	GUIDE ROLLER PART
4	ZS-418616J	PAN20X2.8STL CMT PS1 LEADER
5	BL-433609N4	ARM PINCH BLK
6	MT-433537N2	DISK REEL
7	BL-433538N6	ARM TENSION BLK
8	ML-433604N6	ARM REVIEW PART
9	ZG-433559N1	SP TORSION PINCH
10	ZG-433608N5	SP TORSION REVIEW
11	ML-433560N	LEVER DETECTOR
12	ML-433553N1	MAIN BRAKE(L)BLK
13	ML-433546N2	MAIN BRAKE(R)BLK
14	ZG-433557N	SP PULL M.B
15	ML-433567N1	SLIDE LOADING
16	BV-433615N8	HOLDER CASSETTE BLK
17	BL-438155C	ARM LOADING(2) BLK
18	BB-433174C	MECHA BASE BLK NX

The parts reference numbered 500 to 511 will not be supplied with the MECHA BASE BLK NX.

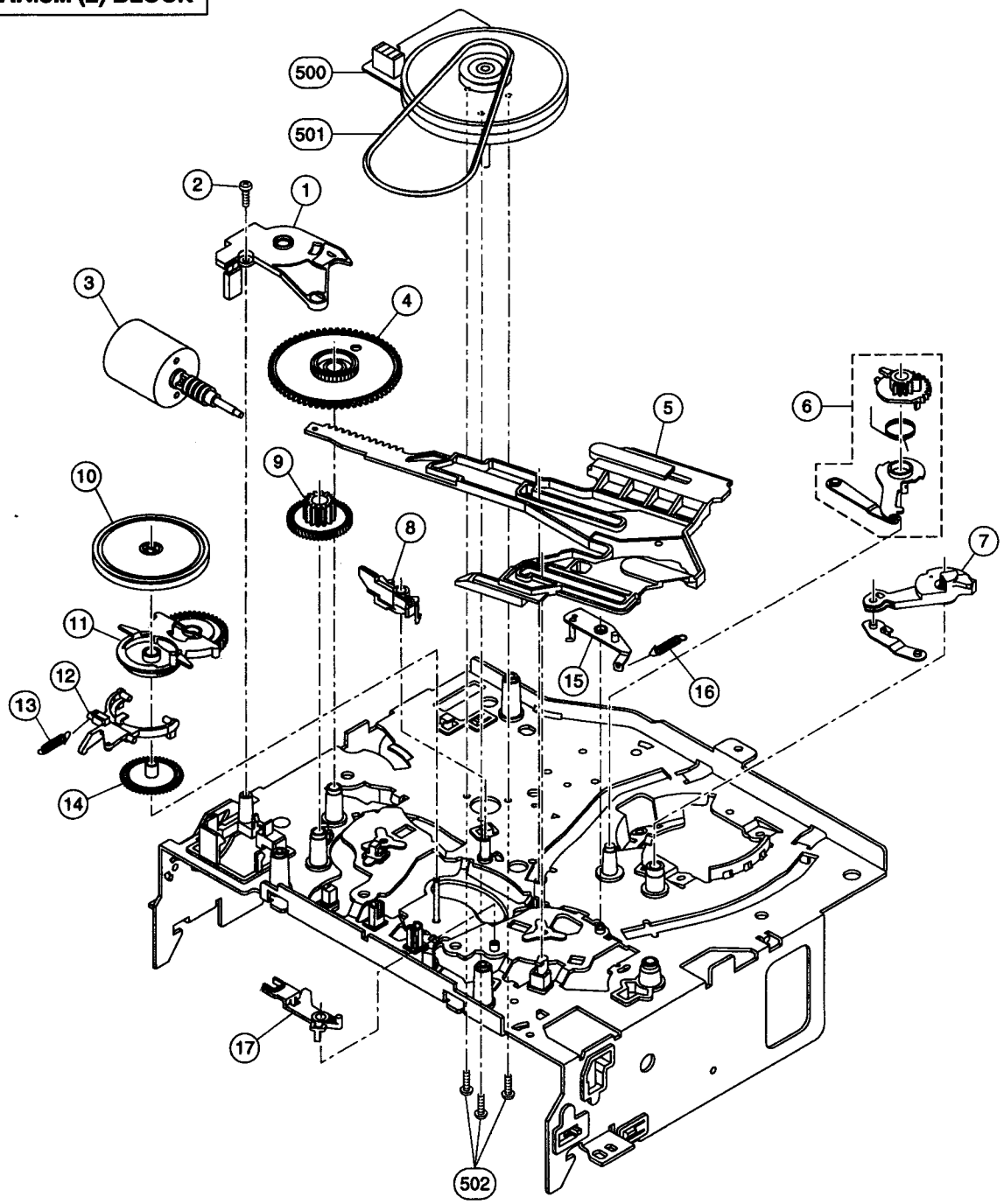
500	ZS-417161T	PAN23X04STL CMT (TL)
501	BM-433198T	MOTOR F20EL60
502	MZ-433904T	EARTH BRUSH PART
503	ZS-479474C	PAN26X05STL CMT (CH)
504-A	BV-V1234D430E	TL DRUMBLK(SERVICE)NX-2PAL-2 [2 HEADS : EXCEPT G291EO & OEM]
504-B	BV-V1234D430A	TL DRUMBLK(SERVICE)NX-2PAL-1 [2 HEADS : G291EO & OEM-PAL ONLY]
504-C	BV-V1234D430F	TL DRUMBLK(SERVICE)NX-SEG [2 HEADS :VO-28/48SEG ONLY]
504-D	BV-V1234D430G	TL DRUMBLK(SERVICE)NX-4PAL [4 HEADS ONLY]
505	ZS-403887C	PT BID26X12STL CMT (CH)
506	HE-433151C	HEAD E VTR-1X2ERS11-108
507	ZS-344754C	ST PAN30X06STL CMT C080 (CH)
508	HR-435698C3	HEAD ASSY HVUXA1003A
509	BL-433689C	HEAD CLEANER BLK (CH) [EXCEPT EK, G280EO, 4008NE, 6158NE, VO-28SEG]
510	HZ-417681N	ROLLER HEAD CLEANER(2) (SG) [EXCEPT EK, G280EO, 4008NE, 6158NE, VO-28SEG]
511	ML-433628C	ARM MASK OPENER (CH)

NOTE :
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

MECHANISM (1) BLOCK



MECHANISM (2) BLOCK



3. MECHANISM (2) BLOCK

Ref. No.	Part No.	Description
1	ES-433595N	SW MODE SELECTOR MMS00340ZMBO
2	ZS-389950N	PT BID26X10STL CMT (SG)
3	BM-433593N1	LOADING MOTOR PART
4	MZ-433591N	GEAR CAM CENTER
5	ML-435645N1	SLIDE MAIN(2)
6	MZ-433568N1	GEAR TOGGLE(R)BLK
7	ML-433576N	LEVER TOGGLE(L)
8	ML-433586N1	ARM SLOW BRAKE PART
9	MZ-433589N1	GEAR WHEEL
10	MI-433597N9	DISK CLUTCH PART
11	MI-433579N5	ARM IDLER PART
12	ML-433584N	ARM COUPLING
13	ZG-428605N	SP PULL COUPLING
14	MZ-433578N	GEAR F/R

The parts reference numbered 500 to 502 will not be supplied with the MECHA BASE BLK NX.

Ref. No.	Part No.	Description
500	BM-438348C	MOTOR F2QSB
501	MB-433627C	BELT CAPSTAN (CH)
502	ZS-436277C	ST PAN26X06STL NI3 (CH)

NOTE :
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

4. COMPLETED P.C. BOARD

Ref. No.	Part No.	Description
1-A	BA-V1281C600A	CH PC MAIN BLK G280EA
1-B	BA-V1281C600C	CH PC MAIN BLK G280EDG
1-C	BA-V1281C600E	CH PC MAIN BLK G280EK
1-D	BA-V1281C605A	CH PC MAIN BLK G280EO
1-E	BA-V1281C600H	CH PC MAIN BLK G280ES
1-F	BA-V1281C600L	CH PC MAIN BLK G281SEG [VS-G281SEG,VO-28SEG]
1-G	BA-V1281C600B	CH PC MAIN BLK G285EA
1-H	BA-V1281C605C	CH PC MAIN BLK G286EO
1-I	BA-V1281C600J	CH PC MAIN BLK G290EM
1-J	BA-V1281C605E	CH PC MAIN BLK G291EO
1-K	BA-V1281C600K	CH PC MAIN BLK G293EM
1-L	BA-V1281C600F	CH PC MAIN BLK G295EK
1-M	BA-V1281C600D	CH PC MAIN BLK G296EDG
1-N	BA-V1281C605G	CH PC MAIN BLK G296EO
1-O	BA-V1281C600M	CH PC MAIN BLK G296SEG
1-P	BA-V1281C600G	CH PC MAIN BLK G297EK
1-Q	BA-V1283C600A	CH PC MAIN BLK G480EA
1-R	BA-V1283C600C	CH PC MAIN BLK G480EDG
1-S	BA-V1283Q600H	FR PC MAIN BLK G481SEG [VS-G481SEG,VO-48SEG]
1-T	BA-V1283C600B	CH PC MAIN BLK G485EA
1-U	BA-V1283C600G	CH PC MAIN BLK G493EM
1-V	BA-V1283C600D	CH PC MAIN BLK G496EDG
1-W	BA-V1283C600F	CH PC MAIN BLK G496EO
1-X	BA-V1283Q600J	FR PC MAIN BLK G496SEG
1-Y	BA-V1281Q605J	FR PC MAIN BLK VCR3018CE [VCR1638/3018/4018/6258]
1-Z	BA-V1281Q605H	FR PC MAIN BLK VCR3008CE [VCR3008/4008/6158]
1-AA	BA-V1283Q600K	FR PC MAIN BLK VCR3048CE [VCR3048 ONLY]
2-A	BA-F5003C040A	CH VX VIF-NOR BLK NOR-EA [EA ONLY]
2-B	BA-F5003C030A	CH VX VIF-EDG BLK NOR-EDG [EDG ONLY]
2-C	BA-F5003C040B	CH VX VIF-NOR BLK NOR-EK [EK ONLY]
2-D	BA-F5003C040F	CH VX VIF-NOR BLK NOR-EOG [EXCEPT EA/EDG/EK/SEG]
2-E	BA-F5003C020A	CH VX VIF-SEG BLK NOR-SEG [SEG ONLY]
3-A	BA-V1285C620A	CH PC(#)FRONT BLK G280EA [G280EA/ES,G290EM,G480EA]
3-B	BA-V1285C620B	CH PC(#)FRONT BLK G285EA [G285/G485EA,G293/G493EM]
3-C	BA-V1285C620E	CH PC(#)FRONT BLK G280EDG [G280EDG/EK/EO,G295EK,G480EDG]
3-D	BA-V1285C620F	CH PC(#)FRONT BLK G296EDG [G296EDG/EO/SEG,G496EDG/EO/SEG]
3-E	BA-V1285C620J	CH PC(#)FRONT BLK G286EO [G281/G481SEG,G280EO,G291ED,G297EK]
3-F	BA-V1287Q620A	FR PC(#)FRONT BLK VCR3008CE [VCR1638/3008/3018/3048,VO-28/48SEG]
3-G	BA-V1287Q620C	FR PC(#)FRONT BLK VCR4018NE [VCR4008/4018/6158/6258]

5. MAIN P.C. BOARD BLOCK

Ref. No.	Part No.	Description
C201	⚠ EC-422101C	C MMY V CUT MKTR40 104M 275AC
C202	⚠ EC-422101C	C MMY V CUT MKTR40 104M 275AC
C203	⚠ EC-435729C	C CE V CUT ECKMRSY E222M 400 AC [EK ONLY]
C204	⚠ EC-435729C	C CE V CUT ECKMRSY E222M 400AC
C205	⚠ EC-435729C	C CE V CUT ECKMRSY E222M 400AC
C206	⚠ EC-435729C	C CE V CUT ECKMRSY E222M 400AC [EK ONLY]
C207	⚠ EC-435729C	C CE V CUT ECKMRSY E222M 400AC
C208	⚠ EC-435729C	C CE V CUT ECKMRSY E222M 400AC
C210-A	⚠ EC-432918C	C EC V CUT YK 330M 400.0DC [EXCEPT EM]
C210-B	⚠ EC-425469C	C EC V CUT USWL30 820M 400DC [EM ONLY]
C211	⚠ EC-435665C	C MMY V T05 B32529 473K 400DC
C212	⚠ EC-418759C	C CE V T05 CC45 SL121K 1000DC
C437	EC-432909C	C DBL LAYER T05 SCDA5R5473A
D101	ED-307573C	D SILICON H 1SS131T-77 T26
D102	ED-307573C	D SILICON H 1SS131T-77 T26
D201	⚠ ED-418622C	D SILICON 1N4006N02 T05 800/1A
D202	⚠ ED-418622C	D SILICON 1N4006N02 T05 800/1A
D203	⚠ ED-418622C	D SILICON 1N4006N02 T05 800/1A
D204	⚠ ED-418622C	D SILICON 1N4006N02 T05 800/1A
D205	⚠ ED-436213C	D SILI.ERA2210AVRB T051000/0.5
D207	ED-307573C	D SILICON H 1SS131T-77 T26
D220	⚠ ED-438389C	D SC.ERA82-004 T05 0.6A
D221	⚠ ED-428420C	D SILICON RL103F-N02T05 200/1A
D223	ED-435728C	D SILI.H ERD32-02J6 S12 200/3A
D224	ED-435478C	D SCHOTTKY ERC81-004J10 S12
D225	⚠ ED-428420C	D SILICON RL103F-N02T05 200/1A
D226	ED-422420C	D ZENER H MTZJ20C T26
D227	ED-422420C	D ZENER H MTZJ20C T26
D233	ED-307573C	D SILICON H 1SS131T-77 T26
D234	ED-418820C	D ZENER H MTZJ5.1C T26
D235	ED-434522C	D ZENER H MTZJ10C T26
D236	ED-403280C	D SILICON 1N4002N02 T05 100/1A
D237	ED-403280C	D SILICON 1N4002N02 T05 100/1A
D238	ED-403280C	D SILICON 1N4002N02 T05 100/1A
D239	ED-403280C	D SILICON 1N4002N02 T05 100/1A
D245	ED-403280C	D SILICON 1N4002N02 T05 100/1A
D402	ED-390011C	D LED GL451 INFRARED
D403	ED-390012C	D LED GL4800 INFRARED
D404	ED-390012C	D LED GL4800 INFRARED
D407	ED-418918C	D ZENER H MTZJ8.2B T26
D411	ED-307573C	D SILICON H 1SS131T-77 T26
D415	ED-403280C	D SILICON 1N4002N02 T05 100/1A
D416	ED-403280C	D SILICON 1N4002N02 T05 100/1A
D417	ED-403280C	D SILICON 1N4002N02 T05 100/1A
D419	ED-307573C	D SILICON H 1SS131T-77 T26
D420	ED-422519C	D ZENER H MTZJ4.3B T26
D603	ED-307573C	D SILICON H 1SS131T-77 T26 [EA ONLY]
D604	ED-307573C	D SILICON H 1SS131T-77 T26 [EA ONLY]
D605	ED-427618C	D ZENER H MTZJ33A T26 [EXCEPT EA]
D606	ED-307573C	D SILICON H 1SS131T-77 T26 [EA ONLY]
D607	ED-307573C	D SILICON H 1SS131T-77 T26 [EA ONLY]
D614	ED-439308C	D ZENER H MTZJ15C T26 [EXCEPT EA]
D801	ED-307573C	D SILICON H 1SS131T-77 T26 [EXCEPT EA/EM/ES]
FL181	EO-438432C	COIL OSC1 6183A 70.0KHZ
FR201	⚠ ER-435803C	R FUSE V T05RF25SVTP 1/4W 8R2J
FR202	⚠ ER-435803C	R FUSE V T05RF25SVTP 1/4W 8R2J
FR401	⚠ ER-418648C	R FUSE V T05 RF25SCVTP1/4WR24K
FR402	⚠ ER-400729C	R FUSE V T05 RF25SCVTP1/4WR47K
FR403	⚠ ER-418648C	R FUSE V T05 RF25SCVTP1/4WR24K
F201	⚠ EF-394702C	FUSE 218 TIME 250V 2.00A
F202	⚠ EF-438424C	FUSE V 491 T05 60V 2.0A
IC1	EI-438400C	IC LA71507ML
IC2	EI-435272C	IC LC89978M-TE-R FPR T16E
IC3-A	EI-435229C	IC LA70011M-TRM FPR T24E [4 HEADS ONLY]

Ref. No.	Part No.	Description
IC3-B	EI-435270C	IC LA70001M-TRM FPR T24E [2 HEADS ONLY]
IC4-A	EI-438399C	IC TC90A24F-303 FPL T16E [EXCEPT EDG]
IC4-B	EI-439617C	IC TC90A24F-305 FPL T16E [EDG ONLY]
IC5	EI-439114C	IC SDA5650XGEG FP T24E [VPS/PDC MODELS ONLY]
IC201	⚠ EI-422128C	IC TA76431S T05
IC202	EI-438248C	IC KA78L09AZ T05
IC401-A	EI-439537C	IC M37777MAA3A3GP VXGSYFS1 [EXCEPT EA/EDG/EK]
IC401-B	EI-439538C	IC M37777MAA3A4GP VXGSYVS1 [EA ONLY]
IC401-C	EI-439447C1	IC M37777MAA3A6GP VXGSYFV3 [EK ONLY]
IC401-D	EI-439616C	IC M37777MAA3A8GP VXGSYFR1 [EDG ONLY]
IC402	EI-439673C	IC BA4558F-E2 FPE2T12E
IC403	EI-438372C	IC BA6956N
IC404	EI-431275C	IC 24LC04BT/SN FP T12E
IC407	EI-435187C	IC S-806H-Z TO-92 T05
IC601	EI-337530C	IC UPC574J [EA ONLY]
IC801	EI-435189C	IC STV6400D-TR FPTRT24E [2 SCART SOCKET MODEL ONLY]
IC851	EI-438382C	IC LA7151M TP-T1 FPR T32P [2 SCART SOCKET MODEL ONLY]
IC852	EI-438383C1	IC BU4052BCF E2 FPE2T16E [2 SCART SOCKET MODEL ONLY]
IC901	EI-432899C	IC LA7337 [SEG ONLY]
L1	E0-414620C	COIL FIX 1 LAP02TA T26 560J
L2	E0-418521C	COIL FIX 1 LAP02TA T26 121J
L4	E0-389412C	COIL FIX 1 LAV35VB007 T05 101J
L5	E0-389412C	COIL FIX 1 LAV35VB007 T05 101J
L51	E0-422477C	COIL FIX 1 LF-5.0S T26 470J
L71	E0-414622C	COIL FIX 1 EL0607RA T05 101K
L72	E0-422483C	COIL FIX 1 LF-5.0S T26 181J [EXCEPT G281/G296SEG,G291EO, OEM-2HEADS]
L73	E0-357630C	COIL FIX 1 LAP02TA T26 101K
L101	E0-414620C	COIL FIX 1 LAP02TA T26 560J [EXCEPT EA/EK]
L102	E0-422477C	COIL FIX 1 LF-5.0S T26 470J
L103	E0-422477C	COIL FIX 1 LF-5.0S T26 470J
L151	E0-414614C	COIL FIX 1 LAP02TA T26 151J
L152	E0-357539C	COIL FIX 1 EL0606RA T05 222K
L181	E0-414622C	COIL FIX 1 EL0607RA T05 101K
L182	E0-345888	COIL FIX 1 EL0606SKI 271J
L201	⚠ E0-438251C	COIL LF UF1922S4-152Y1R5-01 [EXCEPT EA/EDG/EM/ES]
L202	⚠ E0-438249C	COIL LF HF2022R-333Y0R3-01
L203	E0-438250C	COIL FIX 2 B-97032 330K
L204	E0-438250C	COIL FIX 2 B-97032 330K
L303	E0-357630C	COIL FIX 1 LAP02TA T26 101K
L401	E0-414830C	COIL FIX 1 LAP02TA T26 220J
L402	E0-414830C	COIL FIX 1 LAP02TA T26 220J
L601	E0-422488C	COIL FIX 1 LF-5.0S T26 100J
L602	E0-422488C	COIL FIX 1 LF-5.0S T26 100J [EA/EDG/EO/ES ONLY]
L603	E0-422488C	COIL FIX 1 LF-5.0S T26 100J [SEG ONLY]
L604	E0-389412C	COIL FIX 1 LAV35VB007 T05 101J [EXCEPT EA]
L605	E0-422488C	COIL FIX 1 LF-5.0S T26 100J [EA ONLY]
L607	E0-389412C	COIL FIX 1 LAV35VB007 T05 101J
L801	E0-389412C	COIL FIX 1 LAV35VB007 T05 101J
L851	E0-389412C	COIL FIX 1 LAV35VB007 T05 101J [2 SCART SOCKET MODEL ONLY]
L901	E0-414616C	COIL FIX 1 LAP02TA T26 270J [SEG ONLY]
L902	E0-422479C	COIL FIX 1 LF-5.0S T26 330J [SEG ONLY]
L903	E0-414620C	COIL FIX 1 LAP02TA T26 560J [SEG ONLY]

Ref. No.	Part No.	Description
L904	E0-422488C	COIL FIX 1 LF-5.0S T26 100J [SEG ONLY]
L905	E0-414830C	COIL FIX 1 LAP02TA T26 220J [SEG ONLY]
L906	E0-422474C	COIL FIX 1 LF-5.0S T26 6R8J [SEG ONLY]
L907	E0-389412C	COIL FIX 1 LAV35VB007 T05 101J [SEG ONLY]
MD601-A	BV-429839C1	RF CONVERTER YAA21-1045H G EO [EO ONLY]
MD601-B	BV-438417C	RF CONVER.YAA21-1146G 37EA [EA ONLY]
MD601-C	BV-435423C	RF CONVERTER MDLP3E008C G/I/K [EK & OEM ONLY]
MD601-D	BV-434180C	RF CONVERT.YAA21-1108G G/K EDG [EDG ONLY]
MD601-E	BV-438371C	RF CONVERTER MDLK6Z333A SECAM [SEG ONLY]
MD601-F	BV-429837C1	RF CONVERTER YAA21-1046H I EK [VS-G280ES ONLY]
MD601-G	BV-387611C	RF CONVERTER YAA21-0808G EV [EM ONLY]
PH201	⚠ ET-422113C	PHOTO COUPLER PS2561-1-V
PJ802	EJ-429978C	SOCKET 035 0 9846 05 21P [EXCEPT EA/EM/ES]
P2-A	EJ-433221C	SOCKET 06FE-BT-VK-N 6P [4 HEADS ONLY]
P2-B	EJ-428388C	SOCKET 04FE-BT-VK-N 4P [2 HEADS ONLY]
P201	⚠ EJ-416590C	SOCKET INLET CCT-2302-0371 2P
P301	EJ-433222C	SOCKET 05FE-BT-VK-N 5P [FRONT INPUT MODEL ONLY]
P401	EJ-438376C	PLUG TMC-J08P-A1 8P
P402	EJ-433184C	SOCKET TAS-X06X-G1 6P
P403	EJ-434181C	SOCKET 10FE-BT-VK-N 10P
P405	EJ-433220C	SOCKET 07FE-BT-VK-N 7P
P801	EJ-437241C	SOCKET 13FE-BT-VK-N 13P [2 SCART SOCKET MODEL ONLY]
P803	EJ-437243C	PLUG 53290-0910 9P [EA/EM/ES ONLY]
R201	⚠ ER-422189C	R CT P BGR3N 3W 4R7K [EXCEPT EA/EDG/EM/ES]
R206	ER-428396C	R OMF H S15 FS ERG2SH 2W 823J
R208	ER-422512C	R OMF H S15 FS ERG2SH 2W 151J
R210-A	ER-428386C	R OMF V T05 FS ERX1SE 1W R56J [EXCEPT EM]
R210-B	ER-416671C	R OMF V T05 FS ERX1SE 1W R33J [EM ONLY]
SW401	ES-433183C	SW MICRO MPU10390MLB0
TR1	ET-416933C	TR C.2SD601A R,S TXT08E
TR2	ET-416933C	TR C.2SD601A R,S TXT08E
TR5	ET-416932C	TR C.2SB709A R,S TXT08E
TR6	ET-429897C	TR C.DTC144EKA T146T08E [4 HEADS ONLY]
TR7	ET-416932C	TR C.2SB709A R,S TXT08E
TR8	ET-416932C	TR C.2SB709A R,S TXT08E
TR9	ET-416932C	TR C.2SB709A R,S TXT08E [EDG/EM/ES & G485EA ONLY]
TR10	ET-416933C	TR C.2SD601A R,S TXT08E [EDG/EM/ES & G485EA ONLY]
TR28	ET-361961C	TR DTC144ES T05 [EXCEPT G281/G296SEG, G291EO, OEM-2HEADS]
TR29	ET-361961C	TR DTC144ES T05 [EXCEPT G281/G296SEG, G291EO, OEM-2HEADS]
TR72	ET-416933C	TR C.2SD601A R,S TXT08E
TR73	ET-416933C	TR C.2SD601A R,S TXT08E
TR77	ET-429896C	TR C.DTA144EKA T146T08E [EXCEPT G281/G296SEG, G291EO, OEM-2HEADS]
TR101	ET-416932C	TR C.2SB709A R,S TXT08E
TR102	ET-433976C	TR C.DTA114TKA T146T08E [EXCEPT EA/EK]
TR103	ET-416933C	TR C.2SD601A R,S TXT08E
TR151	ET-392663C	TR 2SC1740S R,S T05
TR152	ET-438425C	TR 2SD1858 P,Q,R T05

Ref. No.	Part No.	Description
TR170	ET-416933C	TR C.2SD601A R,S TXT08E [EXCEPT OEM]
TR171	ET-429897C	TR C.DTC144EKA T146T08E [EXCEPT OEM]
TR172	ET-437201C	TR C.DTA143TKA T146T08E [EXCEPT OEM]
TR181	ET-438425C	TR 2SD1858 P,Q,R T05
TR182	ET-438353C	TR C.2SB1198K Q,R T146T08E
TR183	ET-438352C	TR C.2SD1782K Q,R T146T08E
TR184	ET-438352C	TR C.2SD1782K Q,R T146T08E
TR201-A	⚠ ET-427539C	TR 2SC4908 LF625 [EXCEPT EM]
TR201-B	⚠ ET-438349C	TR FET 2SK2769-01MR F111 [EM ONLY]
TR202-A	ET-403869C	TR 2SD2144S U,V T05 [EXCEPT EM]
TR202-B	ET-428407C	TR 2SC3616 M,L T05 [EM ONLY]
TR203	ET-428407C	TR 2SC3616 M,L T05 [EM ONLY]
TR205	ET-392663C	TR 2SC1740S R,S T05
TR206	ET-434246C	TR 2SB1326 Q,R T05 [EXCEPT EM]
TR207	ET-368786C	TR DTC143ZS T05 [EXCEPT EM]
TR209	ET-392663C	TR 2SC1740S R,S T05
TR210	ET-416697C	TR 2SD2396 J,K
TR211	ET-392663C	TR 2SC1740S R,S T05
TR212	ET-392663C	TR 2SC1740S R,S T05
TR213	ET-368786C	TR DTC143ZS T05
TR301	ET-429897C	TR C.DTC144EKA T146T08E
TR302	ET-429896C	TR C.DTA144EKA T146T08E
TR401	ET-390009C	TR PHOTO PT493F
TR402	ET-390009C	TR PHOTO PT493F
TR403	ET-390010C	TR PHOTO PT4800
TR404	ET-390010C	TR PHOTO PT4800
TR405	ET-430868C	TR C.DTC114EKA T146T08E
TR406	ET-416932C	TR C.2SB709A R,S TXT08E
TR408	ET-428400C	TR C.DTC143EKA T146T08E
TR410	ET-437201C	TR C.DTA143TKA T146T08E
TR411	ET-416932C	TR C.2SB709A R,S TXT08E
TR412	ET-433071C	TR C.DTC144TKA T146T08E
TR601	ET-433071C	TR C.DTC144TKA T146T08E [EK/EM & OEM ONLY]
TR602	ET-392746C	TR 2SA933AS R,S T05 [EK/EM & OEM ONLY]
TR603	ET-416932C	TR C.2SB709A R,S TXT08E [EA ONLY]
TR604	ET-416932C	TR C.2SB709A R,S TXT08E [EA ONLY]
TR605	ET-416932C	TR C.2SB709A R,S TXT08E [EA ONLY]
TR606	ET-429897C	TR C.DTC144EKA T146T08E [EA ONLY]
TR607	ET-429897C	TR C.DTC144EKA T146T08E [EA ONLY]
TR608	ET-414816C	TR 2SC2668 Y T05 [EA ONLY]
TR610	ET-416932C	TR C.2SB709A R,S TXT08E [EA ONLY]
TR611	ET-416932C	TR C.2SB709A R,S TXT08E
TR614	ET-416932C	TR C.2SB709A R,S TXT08E [EA ONLY]
TR615	ET-416933C	TR C.2SD601A R,S TXT08E
TR616	ET-416932C	TR C.2SB709A R,S TXT08E
TR617	ET-429897C	TR C.DTC144EKA T146T08E [EA ONLY]
TR801	ET-416932C	TR C.2SB709A R,S TXT08E [EXCEPT 2 SCART SOCKET MODEL]
TR802	ET-416932C	TR C.2SB709A R,S TXT08E [2 SCART SOCKET MODEL ONLY]
TR803	ET-429896C	TR C.DTA144EKA T146T08E [EXCEPT EA/EM/ES]
TR804	ET-433072C	TR C.DTC114TKA T146T08E [EXCEPT EA/EM/ES]
TR805	ET-416933C	TR C.2SD601A R,S TXT08E [EXCEPT EA/EM/ES]
TR806	ET-364084C	TR DTA143ES T05 [2 SCART SOCKET MODEL ONLY]
TR807	ET-429897C	TR C.DTC144EKA T146T08E [2 SCART SOCKET MODEL ONLY]
TR851	ET-429897C	TR C.DTC144EKA T146T08E [2 SCART SOCKET MODEL ONLY]
TR852	ET-429897C	TR C.DTC144EKA T146T08E [2 SCART SOCKET MODEL ONLY]
TR854	ET-416933C	TR C.2SD601A R,S TXT08E [2 SCART SOCKET MODEL ONLY]
TR855	ET-433072C	TR C.DTC114TKA T146T08E
TR870	ET-416933C	TR C.2SD601A R,S TXT08E
TR871	ET-416933C	TR C.2SD601A R,S TXT08E
TR872	ET-416933C	TR C.2SD601A R,S TXT08E
TR873	ET-364291N	TR DTA144ES T05
TR901	ET-416932C	TR C.2SB709A R,S TXT08E [SEG ONLY]
TR902	ET-433071C	TR C.DTC144TKA T146T08E [SEG ONLY]
TR903	ET-416933C	TR C.2SD601A R,S TXT08E [SEG ONLY]
TR904	ET-364291N	TR DTA144ES T05 [SEG ONLY]
TR905	ET-416933C	TR C.2SD601A R,S TXT08E [SEG ONLY]
TR906	ET-429899C	TR C.DTA144TKA T146T08E [SEG ONLY]
TR907	ET-429897C	TR C.DTC144EKA T146T08E [SEG ONLY]
TU601-A	EE-438420C	TV TUNER TELE9-111A [EXCEPT EA/SEG, G280/G295EK]
TU601-B	EE-435227C	TV TUNER TELE1-012A [EA ONLY]
TU601-C	EE-438419C	TV TUNER TELB7-021A [VS-G280EK/G295EK ONLY]
TU601-D	EE-438370C	TV TUNER B8026ER [SEG ONLY]
T201-A	⚠ BT-438422C	TRANS POW V1285-EO [EXCEPT EM]
T201-B	⚠ BT-438373C	TRANS POW V1281-EM [EM ONLY]
X1	EI-431006C	OSC X'TAL HC-49U GX 3.579545MH
X2	EI-430836C	OSC X'TAL HC-49U L20 4.433619M
X401	EI-425240C	OSC X'TAL APS1011A 16.000MHZ
X402	EI-438488C	OSC X'TAL VT-200 32.768KHZ
1	SZ-433649C	HOLDER S/E SENSOR (CH)
2	SZ-428508C	HOLDER PHOTO SENSOR (CH)
3	SZ-433648C	HOLDER D-LED (CH)

6. VIF P.C. BOARD(EXCEP EDG/SEG)

Ref. No.	Part No.	Description
FL1-A	EH-435792C	FILTER CE G1984M B/G 38.9M [EXCEPT EK/ES]
FL1-B	EH-435790C	FILTER CE J1956M I 38.9M [EK/ES ONLY]
FL2-A	EH-433121C	FILTER CE SFSH5.5MCB-TF21 T05 [EXCEPT EK/ES]
FL2-B	EH-433122C	FILTER CE SFSH6.0MCB-TF21 T05 [EK/ES ONLY]
FL3-A	EH-432948C	FILTER CE TPS5.5MWA-TF21 T05 [EXCEPT EK/ES]
FL3-B	EH-405642C	FILTER CE TPS6.0MB-TF21 T05 [EK/ES ONLY]
IC1	EI-368809C	IC M51496P
L1-A	EO-428259C	COIL FIX 1 EL0405RA T05 R68K [EA ONLY]
L1-B	EO-416716C	COIL FIX 1 EL0405RA T05 8R2J [EXCEPT EA]
L7-A	EO-427708C	COIL FIX 1 EL0405RA T05 120J [EXCEPT EK/ES]
L7-B	EO-416716C	COIL FIX 1 EL0405RA T05 8R2J [EK/ES ONLY]
L8-A	EO-403273C	COIL FIX 1 EL0405RA T05 330J [EA/EK/ES ONLY]
L8-B	EO-408956C	COIL FIX 1 EL0405RA T05 390J [EXCEPT EA/EK/ES]
TR1	ET-432740C	TR C.2SC2480 T,S TXT08E
TR2	ET-416932C	TR C.2SB709A R,S TXT08E
VL3-A	EO-435419C	COIL TUN1 JPS-1366FM 5.5M NOR. [EXCEPT EK/ES]
VL3-B	EO-435421C	COIL TUN1 JPS-1331AFM6.0M NOR. [EK/ES ONLY]
VL4	EO-435416C	COIL TUN1 JPS-002AFT38.9M NOR.
VL5	EO-435417C	COIL TUN1 JPS-1322A LLD 38.9M
VR51	EV-437195C	R S-FIX H T05 RH063MC 0.1W 682

7. VIF P.C. BOARD(EDG ONLY)

Ref. No.	Part No.	Description
FL1	EH-435679C	FILTER CE K2960M D/K 38.9M
FL2	EH-414623C	FILTER CE TPS6.5MB-TF21 T05
FL3	EH-432948C	FILTER CE TPS5.5MWA-TF21 T05
FL51	EH-433123C	FILTER CE SFSH6.5MCB-TF21 T05
FL52	EH-433121C	FILTER CE SFSH5.5MCB-TF21 T05
FL53	EH-433122C	FILTER CE SFSH6.0MCB-TF21 T05
IC1	EI-368809C	IC M51496P
L1	EO-428123C	COIL FIX 1 EL0405RA T05 5R6J
L5	EO-422474C	COIL FIX 1 LF-5.0S T26 6R8J
L6	EO-408956C	COIL FIX 1 EL0405RA T05 390J
L51	EO-416716C	COIL FIX 1 EL0405RA T05 8R2J
L52	EO-408834C	COIL FIX 1 EL0405RA T05 221J
TR1	ET-432740C	TR C.2SC2480 T,S TXT08E
TR2	ET-416932C	TR C.2SB709A R,S TXT08E
TR3	ET-416933C	TR C.2SD601A R,S TXT08E
TR4	ET-416932C	TR C.2SB709A R,S TXT08E
TR51	ET-416933C	TR C.2SD601A R,S TXT08E
TR52	ET-416933C	TR C.2SD601A R,S TXT08E
VL2	EO-435421C	COIL TUN1 JPS-1331AFM6.0M NOR.
VL3	EO-435416C	COIL TUN1 JPS-002AFT38.9M NOR.
VL4	EO-435417C	COIL TUN1 JPS-1322A LLD 38.9M
VR1	EV-432752C	R S-FIX V T05 RH063LC 0.1W 223
X1	EI-368829C	OSC CE CSB512P

8. VIF P.C. BOARD(SEG ONLY)

Ref. No.	Part No.	Description
D20	ED-416930C	D SILICON C.MA77-TX TXT08E
D21	ED-416930C	D SILICON C.MA77-TX TXT08E
D60	ED-416930C	D SILICON C.MA77-TX TXT08E
D62	ED-416930C	D SILICON C.MA77-TX TXT08E
FL1	EH-437233C	FILTER CE TSF5330U
FL20	EH-438408C	FILTER CE TSB6308U
FL50	EH-433121C	FILTER CE SFSH5.5MCB-TF21 T05
FL90	EH-414623C	FILTER CE TPS6.5MB-TF21 T05
FL91	EH-432948C	FILTER CE TPS5.5MWA-TF21 T05
IC1	EI-437235C	IC TA8865BN
L1	EO-428463C	COIL FIX 1 EL0405RA T05 2R7J
L2	EO-408838C	COIL FIX 1 EL0405RA T05 680J
L20	EO-427255C	COIL FIX 1 EL0405RA T05 1R0J
L21	EO-408838C	COIL FIX 1 EL0405RA T05 680J
L40	EO-403273C	COIL FIX 1 EL0405RA T05 330J
L60	EO-408838C	COIL FIX 1 EL0405RA T05 680J
L80	EO-408838C	COIL FIX 1 EL0405RA T05 680J
L90	EO-408957C	COIL FIX 1 EL0405RA T05 180J
L91	EO-432683C	COIL FIX 1 EL0405RA T05 3R3J
L92	EO-432682C	COIL FIX 1 EL0405RA T05 220J
TR1	ET-428400C	TR C.DTC143EKA T146T08E
TR2	ET-432740C	TR C.2SC2480 T,S TXT08E
TR20	ET-432740C	TR C.2SC2480 T,S TXT08E
TR21	ET-416933C	TR C.2SD601A R,S TXT08E
TR22	ET-416933C	TR C.2SD601A R,S TXT08E
TR40	ET-416932C	TR C.2SB709A R,S TXT08E
TR41	ET-429897C	TR C.DTC144EKA T146T08E
TR50	ET-416933C	TR C.2SD601A R,S TXT08E
TR51	ET-429897C	TR C.DTC144EKA T146T08E
TR60	ET-430868C	TR C.DTC114EKA T146T08E
TR61	ET-430868C	TR C.DTC114EKA T146T08E
TR80	ET-416933C	TR C.2SD601A R,S TXT08E
TR81	ET-429897C	TR C.DTC144EKA T146T08E
TR82	ET-437201C	TR C.DTA143TKA T146T08E
TR90	ET-416933C	TR C.2SD601A R,S TXT08E
TR91	ET-416932C	TR C.2SB709A R,S TXT08E
TR92	ET-433072C	TR C.DTC114TKA T146T08E
TR100	ET-430868C	TR C.DTC114EKA T146T08E
TR101	ET-429896C	TR C.DTA144EKA T146T08E
TR102	ET-430868C	TR C.DTC114EKA T146T08E
TR103	ET-429896C	TR C.DTA144EKA T146T08E
VC60	EC-412095C	C S-FIX H T05 TZ03Z100TR169
VC61	EC-412095C	C S-FIX H T05 TZ03Z100TR169
VL1	EO-435245C	COIL TUN1 JPS-515TRAP40.4M SEG
VL40	EO-437236C	COIL TUN1 JPS-608 FM,DET SEG
VL60	EO-437237C	COIL TUN1 JPS-229 SIF,VCO SEG
VL61	EO-437239C	COIL TUN1 JPS-228 PIF,VCO SEG
VR50	EV-437240C	R S-FIX V T05 RH063LC 0.1W 103
X80	EI-437238C	OSC CE CSB503F30

9. OPERATION P.C. BOARD

Ref. No.	Part No.	Description
D101	ED-307573C	D SILICON H 1SS131T-77 T26
D102	ED-307573C	D SILICON H 1SS131T-77 T26
D103	ED-307573C	D SILICON H 1SS131T-77 T26
D106	ED-427719C	D ZENER H MTZJ9.1A T26
FL101	EM-438397C	IND FL FV758G
IC101	EI-422145C	IC UPD16312GB-3B4
L101	EO-357630C	COIL FIX 1 LAP02TA T26 101K
PH101	ET-428361C	DETECTOR GP1U281X
P101	EJ-434183C	SOCKET 10FE-ST-VK-N 10P
SW101	ES-433200C	SW TACT TSTD-2 T05
SW102	ES-433200C	SW TACT TSTD-2 T05
SW103	ES-433200C	SW TACT TSTD-2 T05
SW104	ES-433200C	SW TACT TSTD-2 T05
SW105	ES-433200C	SW TACT TSTD-2 T05
SW107	ES-433200C	SW TACT TSTD-2 T05
SW108	ES-433200C	SW TACT TSTD-2 T05
SW109	ES-433200C	SW TACT TSTD-2 T05
SW110	ES-433200C	SW TACT TSTD-2 T05

10. FRONT INPUT P.C. BOARD (FRONT INPUT MODEL ONLY)

Ref. No.	Part No.	Description
D31	ED-307573C	D SILICON H 1SS131T-77 T26
D32	ED-307573C	D SILICON H 1SS131T-77 T26
L31	EO-389412C	COIL FIX 1 LAV35VB007 T05 101J
PJ1	EJ-436219C	PIN J YKB11-3003 YELLOW 1P
PJ3	EJ-436222C	PIN J YKB11-3004 BLACK 1P
P4	EJ-433223C	SOCKET 05FE-ST-VK-N 5P
TR1	ET-392663C	TR 2SC1740S R,S T05
TR3	ET-362842C	TR DTC143TS T05
TR11	ET-362842C	TR DTC143TS T05

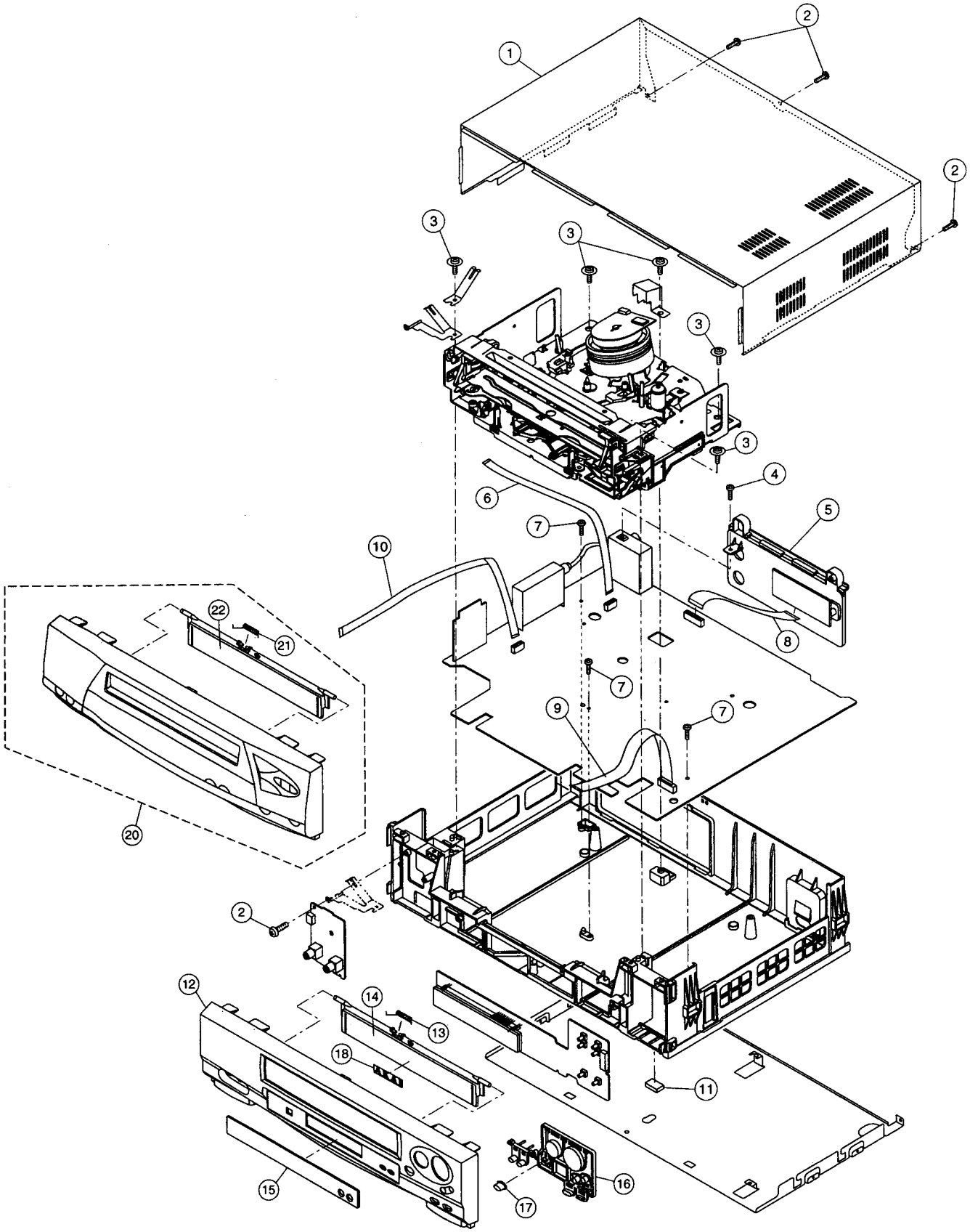
11. SCART SOCKET P.C. BOARD (2 SCART SOCKET MODEL ONLY)

Ref. No.	Part No.	Description
PJ301	EJ-435428C	SOCKET 0350536100 BLACK 21P
P301	EJ-438354C	SOCKET 00 6216 013 110A 13P

12. REAR RCA P.C. BOARD(EA/EM/ES ONLY)

Ref. No.	Part No.	Description
PJ201	EJ-438380C	PIN J YKC21-5635 4P
P201	EJ-437230C	SOCKET 52418-0910 9P

FINAL ASSEMBLY BLOCK



13. FINAL ASSEMBLY BLOCK

Ref. No.	Part No.	Description
1-A	SP-437671C	COVER UPPER VX S (CH) [EXCEPT G280EK/G295EK & OEM]
1-B	SP-437667C	COVER UPPER VX (CH) [G280EK/G295EK & OEM ONLY]
2	ZS-393515C	BT BID30X10STL BZN (CH)
3	ZS-426416C	BT PAN30X10STL CMT C080 (CH)
4	ZS-323728C	BID30X05STL CMT (CH)
5-A	SP-438036C	PANEL REAR JACK EA (CH) [EA/EM/ES ONLY]
5-B	SP-438033C	PANEL REAR JACK EO(1) (CH) [G280EDG/EK/EO,G295EK,G480EDG]
5-C	SP-438035C	PANEL REAR JACK SEG (CH) [SEG ONLY]
5-D	SP-438034C	PANEL REAR JACK EO(2) (CH) [ALL OTHERS]
6	EW-438403C	CORD VX FFC MA-DM L140 7P
7	ZS-376521C	BT BID30X08STL CMT (CH)
8	EW-438406C	CORD VX FFC MA-F(C)L70 13P [2 SCART SOCKET MODEL ONLY]
9	EW-438404C	CORD VX FFC OP-MA L120 10P
10	EW-438405C	CORD VX FFC F-MA L200 5P
11	SA-422907C	FOOT AX (CH)
12-A	SP-438039C	PANEL FRONT(B)E1 (CH) [G280EA/EDG/EO/ES,G286EO,G290EM, G291EO,G297EK,G480EA/EDG]
12-B	SP-438100C	PANEL FRONT(B)F1 (CH) [[G281SEG,G481SEG]
12-C	SP-438101C1	PANEL FRONT(A)E2 (CH) [G285EA,G293EM,G296EDG/EO,G485EA, G493EM,G496EDG/EO]
12-D	SP-438106C1	PANEL FRONT(A)F2 (CH) [G296SEG,G496SEG]
12-E	SP-438119C	PANEL FRONT(B)E2 (CH) [G280EK,G295EK]
13	ZG-438047C	SP MASK (CH)
14-A	SE-438056C	MASK CASSETTE VS-G280(E1) (CH) [G280EA]
14-B	SE-438057C	MASK CASSETTE VS-G280(E2) (CH) [G285EDG]
14-C	SE-438058C	MASK CASSETTE VS-G280(E3) (CH) [G280EK]
14-D	SE-438065C	MASK CASSETTE VS-G280(E4) (CH) [G280EO]
14-E	SE-438122C	MASK CASSETTE VS-G280(E5) (CH) [G280ES]
14-F	SE-438066C	MASK CASSETTE VS-G281(F1) (CH) [G281SEG]
14-G	SE-438079C	MASK CASSETTE VS-G285(E1) (CH) [G285EA]
14-H	SE-438062C	MASK CASSETTE VS-G286(E1) (CH) [G286EO]
14-I	SE-438061C	MASK CASSETTE VS-G290(E1) (CH) [290EM]
14-J	SE-438064C	MASK CASSETTE VS-G291(E1) (CH) [G291EO]
14-K	SE-438081C	MASK CASSETTE VS-G293(E1) (CH) [293EM]
14-L	SE-438059C	MASK CASSETTE VS-G295(E1) (CH) [G295EK]
14-M	SE-438080C	MASK CASSETTE VS-G296(E1) (CH) [G296EDG]
14-N	SE-438082C	MASK CASSETTE VS-G296(E2) (CH) [G296EO]
14-O	SE-438083C	MASK CASSETTE VS-G296(F1) (CH) [G296SEG]
14-P	SE-438060C	MASK CASSETTE VS-G297(E1) (CH) [G297EK]
14-Q	SE-438068C	MASK CASSETTE VS-G480(E1) (CH) [G480EA]
14-R	SE-438069C	MASK CASSETTE VS-G480(E2) (CH) [G480EDG]
14-S	SE-438067C	MASK CASSETTE VS-G481(F1) (CH) [G481SEG]
14-T	SE-438086C	MASK CASSETTE VS-G485(E1) (CH) [G485EA]
14-U	SE-438089C	MASK CASSETTE VS-G493(E1) (CH) [G493EM]
14-V	SE-438087C	MASK CASSETTE VS-G496(E1) (CH) [G496EDG]
14-W	SE-438088C	MASK CASSETTE VS-G496(E2) (CH) [G496EO]
14-X	SE-438084C	MASK CASSETTE VS-G496(F1) (CH) [G496SEG]
15-A	SE-438042C	WINDOW FLD(B)E1 (CH) [G280EA/EK/EO,G286EO,G291EO, G295EK,G297EK,G480EA]
15-B	SE-438098C	WINDOW FLD(B)E2 (CH) [G280EDG/ES,G290EM,G293EM]
15-C	SE-438099C	WINDOW FLD(B)F1 (CH) [G281SEG,G481SEG]
15-D	SE-438102C1	WINDOW FLD(A)E4 (CH) [G285EA]
15-E	SE-438104C1	WINDOW FLD(A)E6 (CH) [G293EM,G493EM]
15-F	SE-438103C1	WINDOW FLD(A)E2 (CH) [G296EDG,G496EDG]
15-G	SE-438105C1	WINDOW FLD(A)E5 (CH) [G296EO,G496EO]
15-H	SE-438108C1	WINDOW FLD(A)F1 (CH) [G296SEG,G496SEG]
15-I	SE-438045C1	WINDOW FLD(A)E1 (CH) [G485EA]
16-A	SB-438038C	BUTTON OP(A)1 (CH) [G285EA,G293EM,G296EDG/EO/SEG, G485EA,G493EM,G496EDG/EO/SEG]
16-B	SB-438040C1	BUTTON OP(B)1 (CH) [G280EA/EDG/EO/ES,G281SEG,G286EO, G290EM,G291EO,G297EK,G480EA/EDG, G481SEG]
16-C	SB-438121C1	BUTTON OP(B)2 (CH) [G280EK,G295EK]
17	SZ-438044C	CAP BUTTON (CH)
18	SM-438046C	NAME PLATE AKAI VX (CH)
20-A	BD-438002C	PANEL F(P)VCR1638 PART (CH)
20-B	BD-437998C	PANEL F(P)VCR3008 PART (CH)
20-C	BD-438000C	PANEL F(P)VCR3018 PART (CH)
20-D	BD-438005C	PANEL F(P)VCR3048 PART (CH)
20-E	BD-438116C	PANEL F(Q)VCR4008 PART (CH)
20-F	BD-438003C	PANEL F(Q)VCR4018 PART (CH)
20-G	BD-438004C	PANEL F(Q)VCR6158 PART (CH)
20-H	BD-438027C	PANEL F(Q)VCR6258 PART (CH)
20-I	BD-439733C	PANEL F(P)VO-28SEG PART
20-J	BD-439732C	PANEL F(P)VO-48SEG PART
21	ZG-429541C	SP MASK(4) (CH)
22-A	SE-436449C	MASK CASSETTE NOKIA(1) (CH)
22-B	SE-436451C	MASK CASSETTE SALORA(1) (CH)
22-C	SE-436416C	MASK CASSETTE LUXOR (CH)
22-D	SE-436418C	MASK CASSETTE FINLUX (CH)
22-E	SE-439745C	MASK CASSETTE OCEANIC(1) (CH)

NOTE :

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

14. ACCESSORY

Ref. No.	Part No.	Description
1-A	AV-438355C	REMOCON RC-Y152E [G280/G480EA, G280ES]
1-B	AV-438368C	REMOCON RC-Y181E [G285/G485EA]
1-C	AV-438369C	REMOCON RC-Y151E [G280EDG/EK/EO,G290/G293/G493EM, G480EDG]
1-D	AV-438364C	REMOCON RC-Y151F [G281SEG]
1-E	AV-438367C	REMOCON RC-Y171E [G286/G291/G296/G496EO,G296/ G496EDG]
1-F	AV-438365C	REMOCON RC-Y161E [G295/297EK]
1-G	AV-438363C	REMOCON RC-Y171F [G296/G481/G496SEG]
1-H	AV-438360C	REMOCON RC-Y171SL [VCR1638NE]
1-I	AV-438362C	REMOCON RC-Y151NK [VCR3008**]
1-J	AV-438361C	REMOCON RC-Y171NK [VCR3018**, VCR3048CE]
1-K	AV-438346C	REMOCON RC-Y151LX [VCR4008NE]
1-L	AV-438359C	REMOCON RC-Y171LX [VCR4018NE]
1-M	AV-438358C	REMOCON RC-Y151FL [VCR6158NE]
1-N	AV-438357C	REMOCON RC-Y171FL [VCR6258NE]
1-O	AV-438676C	REMOCON RC-Y1510C [VO-28SEG]
1-P	AV-438677C	REMOCON RC-Y1710C [VO-48SEG]
2-A	EW-430840C2	AC CORD 200S SF91A SF201 S [EA ONLY]
2-B	EW-439085C	AC CORD 200S BS1363 2.5A250V B [EK & ES[Y6] ONLY]
2-C	EW-430842C1	AC CORD 200S SF200 SF201 E [ALL OTHERS]
3-A	AV-437225C	CORD PAL 1.2M-UNION [FOR PAL MODEL]
3-B	AV-348415C	CORD SECAM [FOR SEG MODEL]
4	AV-427525C	CORD 21PIN AV CABLE [SEG ONLY]

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Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.
AV348415C	14-3-B	BL433609N4	2-5	ED418622C	5-D203	EI439617C	5-IC4-B
AV427525C	14-4	BL433689C	2-509	ED418622C	5-D204	EI439673C	5-IC402
AV437225C	14-3-A	BL438155C	2-17	ED418820C	5-D234	EJ416590C	5-P201
AV438346C	14-1-K	BM433198T	2-501	ED418918C	5-D407	EJ428388C	5-P2-B
AV438355C	14-1-A	BM433593N1	3-3	ED422420C	5-D226	EJ429978C	5-PJ802
AV438357C	14-1-N	BM438348C	3-500	ED422420C	5-D227	EJ433184C	5-P402
AV438358C	14-1-M	BT438373C	5-T201-B	ED422519C	5-D420	EJ433220C	5-P405
AV438359C	14-1-L	BT438422C	5-T201-A	ED427618C	5-D605	EJ433221C	5-P2-A
AV438360C	14-1-H	BVV1234D430A	2-504-B	ED427719C	9-D106	EJ433222C	5-P301
AV438361C	14-1-J	BVV1234D430E	2-504-A	ED428420C	5-D221	EJ433223C	10-P4
AV438362C	14-1-I	BVV1234D430F	2-504-C	ED428420C	5-D225	EJ434181C	5-P403
AV438363C	14-1-G	BVV1234D430G	2-504-D	ED434522C	5-D235	EJ434183C	9-P101
AV438364C	14-1-D	BV387611C	5-MD601-G	ED435478C	5-D224	EJ435428C	11-PJ301
AV438365C	14-1-F	BV429837C1	5-MD601-F	ED435728C	5-D223	EJ436219C	10-PJ1
AV438367C	14-1-E	BV429839C1	5-MD601-A	ED436213C	5-D205	EJ436222C	10-PJ3
AV438368C	14-1-B	BV433522N2	2-1	ED438389C	5-D220	EJ437230C	12-P201
AV438369C	14-1-C	BV433534N3	2-2	ED439308C	5-D614	EJ437241C	5-P801
AV438676C	14-1-O	BV433615N8	2-16	EE435227C	5-TU601-B	EJ437243C	5-P803
AV438677C	14-1-P	BV434180C	5-MD601-D	EE438370C	5-TU601-D	EJ438354C	11-P301
BAF5003C020A	4-2-E	BV435423C	5-MD601-C	EE438419C	5-TU601-C	EJ438376C	5-P401
BAF5003C030A	4-2-B	BV438371C	5-MD601-E	EE438420C	5-TU601-A	EJ438380C	12-PJ201
BAF5003C040A	4-2-A	BV438417C	5-MD601-B	EF394702C	5-F201	EM438397C	9-FL101
BAF5003C040B	4-2-C	EC412095C	8-VC60	EF438424C	5-F202	EO345888	5-L182
BAF5003C040F	4-2-D	EC412095C	8-VC61	EH405642C	6-FL3-B	EO357539C	5-L152
BAV1281C600A	4-1-A	EC418759C	5-C212	EH414623C	7-FL2	EO357630C	5-L73
BAV1281C600B	4-1-G	EC422101C	5-C201	EH414623C	8-FL90	EO357630C	5-L303
BAV1281C600C	4-1-B	EC422101C	5-C202	EH432948C	6-FL3-A	EO357630C	9-L101
BAV1281C600D	4-1-M	EC425469C	5-C210-B	EH432948C	7-FL3	EO389412C	5-L4
BAV1281C600E	4-1-C	EC432909C	5-C437	EH432948C	8-FL91	EO389412C	5-L5
BAV1281C600F	4-1-L	EC432918C	5-C210-A	EH433121C	6-FL2-A	EO389412C	5-L604
BAV1281C600G	4-1-P	EC435665C	5-C211	EH433121C	7-FL52	EO389412C	5-L607
BAV1281C600H	4-1-E	EC435729C	5-C203	EH433121C	8-FL50	EO389412C	5-L801
BAV1281C600J	4-1-I	EC435729C	5-C204	EH433122C	6-FL2-B	EO389412C	5-L851
BAV1281C600K	4-1-K	EC435729C	5-C205	EH433122C	7-FL53	EO389412C	5-L907
BAV1281C600L	4-1-F	EC435729C	5-C206	EH433123C	7-FL51	EO389412C	10-L31
BAV1281C600M	4-1-O	EC435729C	5-C207	EH435679C	7-FL1	EO403273C	6-L8-A
BAV1281C605A	4-1-D	EC435729C	5-C208	EH435790C	6-FL1-B	EO403273C	8-L40
BAV1281C605C	4-1-H	ED307573C	5-D101	EH435792C	6-FL1-A	EO408834C	7-L52
BAV1281C605E	4-1-J	ED307573C	5-D102	EH437233C	8-FL1	EO408838C	8-L2
BAV1281C605G	4-1-N	ED307573C	5-D207	EH438408C	8-FL20	EO408838C	8-L21
BAV1281Q605H	4-1-Z	ED307573C	5-D233	EI337530C	5-IC601	EO408838C	8-L60
BAV1281Q605J	4-1-Y	ED307573C	5-D411	EI368809C	6-IC1	EO408838C	8-L80
BAV1283C600A	4-1-Q	ED307573C	5-D419	EI368809C	7-IC1	EO408956C	6-L8-B
BAV1283C600B	4-1-T	ED307573C	5-D603	EI368829C	7-X1	EO408956C	7-L6
BAV1283C600C	4-1-R	ED307573C	5-D604	EI422128C	5-IC201	EO408957C	8-L90
BAV1283C600D	4-1-V	ED307573C	5-D606	EI422145C	9-IC101	EO414614C	5-L151
BAV1283C600F	4-1-W	ED307573C	5-D607	EI425240C	5-X401	EO414616C	5-L901
BAV1283C600G	4-1-U	ED307573C	5-D801	EI430836C	5-X2	EO414620C	5-L1
BAV1283Q600H	4-1-S	ED307573C	9-D101	EI431006C	5-X1	EO414620C	5-L101
BAV1283Q600J	4-1-X	ED307573C	9-D102	EI431275C	5-IC404	EO414620C	5-L903
BAV1283Q600K	4-1-AA	ED307573C	9-D103	EI432899C	5-IC901	EO414622C	5-L71
BAV1285C620A	4-3-A	ED307573C	10-D31	EI435187C	5-IC407	EO414622C	5-L181
BAV1285C620B	4-3-B	ED307573C	10-D32	EI435189C	5-IC801	EO414830C	5-L401
BAV1285C620E	4-3-C	ED390011C	5-D402	EI435229C	5-IC3-A	EO414830C	5-L402
BAV1285C620F	4-3-D	ED390012C	5-D403	EI435270C	5-IC3-B	EO414830C	5-L905
BAV1285C620J	4-3-E	ED390012C	5-D404	EI435272C	5-IC2	EO416716C	6-L1-B
BAV1287Q620A	4-3-F	ED403280C	5-D236	EI437235C	8-IC1	EO416716C	6-L7-B
BAV1287Q620C	4-3-G	ED403280C	5-D237	EI437238C	8-X80	EO416716C	7-L51
BB433174C	2-18	ED403280C	5-D238	EI438248C	5-IC202	EO418521C	5-L2
BD437998C	13-20-B	ED403280C	5-D239	EI438372C	5-IC403	EO422474C	5-L906
BD438000C	13-20-C	ED403280C	5-D245	EI438382C	5-IC851	EO422474C	7-L5
BD438002C	13-20-A	ED403280C	5-D415	EI438383C1	5-IC852	EO422477C	5-L51
BD438003C	13-20-F	ED403280C	5-D416	EI438399C	5-IC4-A	EO422477C	5-L102
BD438004C	13-20-G	ED403280C	5-D417	EI438400C	5-IC1	EO422477C	5-L103
BD438005C	13-20-D	ED416930C	8-D20	EI438488C	5-X402	EO422479C	5-L902
BD438027C	13-20-H	ED416930C	8-D21	EI439114C	5-IC5	EO422483C	5-L72
BD438116C	13-20-E	ED416930C	8-D60	EI439447C1	5-IC401-C	EO422488C	5-L601
BD439732C	13-20-J	ED416930C	8-D62	EI439537C	5-IC401-A	EO422488C	5-L602
BD439733C	13-20-I	ED418622C	5-D201	EI439538C	5-IC401-B	EO422488C	5-L603
BL433538N6	2-7	ED418622C	5-D202	EI439616C	5-IC401-D	EO422488C	5-L605

Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.
EO422488C	5-L904	ET416932C	5-TR8	ET430868C	8-TR60	SE438059C	13-14-L
EO427255C	8-L20	ET416932C	5-TR9	ET430868C	8-TR61	SE438060C	13-14-P
EO427708C	6-L7-A	ET416932C	5-TR101	ET430868C	8-TR100	SE438061C	13-14-I
EO428123C	7-L1	ET416932C	5-TR406	ET430868C	8-TR102	SE438062C	13-14-H
EO428259C	6-L1-A	ET416932C	5-TR411	ET432740C	6-TR1	SE438064C	13-14-J
EO428463C	8-L1	ET416932C	5-TR603	ET432740C	7-TR1	SE438065C	13-14-D
EO432682C	8-L92	ET416932C	5-TR604	ET432740C	8-TR2	SE438066C	13-14-F
EO432683C	8-L91	ET416932C	5-TR605	ET432740C	8-TR20	SE438067C	13-14-S
EO435245C	8-VL1	ET416932C	5-TR610	ET433071C	5-TR412	SE438068C	13-14-Q
EO435416C	6-VL4	ET416932C	5-TR611	ET433071C	5-TR601	SE438069C	13-14-R
EO435416C	7-VL3	ET416932C	5-TR614	ET433071C	5-TR902	SE438079C	13-14-G
EO435417C	6-VL5	ET416932C	5-TR616	ET433072C	5-TR804	SE438080C	13-14-M
EO435417C	7-VL4	ET416932C	5-TR801	ET433072C	5-TR855	SE438081C	13-14-K
EO435419C	6-VL3-A	ET416932C	5-TR802	ET433072C	8-TR92	SE438082C	13-14-N
EO435421C	6-VL3-B	ET416932C	5-TR901	ET433976C	5-TR102	SE438083C	13-14-O
EO435421C	7-VL2	ET416932C	6-TR2	ET434246C	5-TR206	SE438084C	13-14-X
EO437236C	8-VL40	ET416932C	7-TR2	ET437201C	5-TR172	SE438086C	13-14-T
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EO437239C	8-VL61	ET416932C	8-TR40	ET437201C	8-TR82	SE438088C	13-14-W
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EO438251C	5-L201	ET416933C	5-TR10	ET438353C	5-TR182	SE438102C1	13-15-D
EO438432C	5-FL181	ET416933C	5-TR72	ET438425C	5-TR152	SE438103C1	13-15-F
ER400729C	5-FR402	ET416933C	5-TR73	ET438425C	5-TR181	SE438104C1	13-15-E
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ER418648C	5-FR401	ET416933C	5-TR170	EV437195C	6-VR51	SE438108C1	13-15-H
ER418648C	5-FR403	ET416933C	5-TR615	EV437240C	8-VR50	SE438122C	13-14-E
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ER422512C	5-R208	ET416933C	5-TR854	EW430842C1	14-2-C	SM438046C	13-18
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ES433595N	3-1	ET427539C	5-TR201-A	ML433567N1	2-15	SZ438044C	13-17
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ET392663C	5-TR211	ET429897C	5-TR807	SE436416C	13-22-C	ZS436277C	3-502
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ET403869C	5-TR202-A	ET429897C	8-TR41	SE438042C	13-15-A		
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ET416697C	5-TR210	ET429897C	8-TR81	SE438056C	13-14-A		
ET416932C	5-TR5	ET429899C	5-TR906	SE438057C	13-14-B		
ET416932C	5-TR7	ET430868C	5-TR405	SE438058C	13-14-C		

MEMO

MEMO

AKAI

MODEL VS-G280 EA/EDG/EK/EO/ES,G281 SEG,
MODEL VS-G285 EA,G286/G291 EO,G290/G293 EM
MODEL VS-G295/G297 EK,G296 EDG/EO/SEG
MODEL VS-G480 EA/EDG,G481 SEG,G485 EA
MODEL VS-G493 EM,G496 EDG/EO/SEG

SCHEMATIC DIAGRAMS AND PC BOARDS

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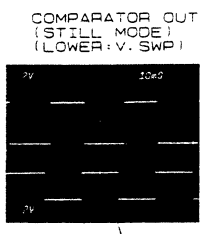
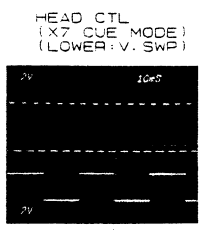
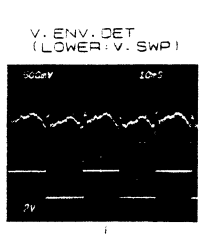
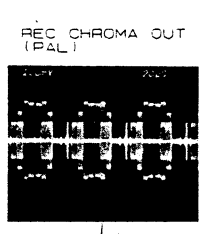
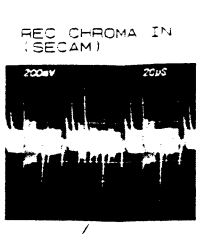
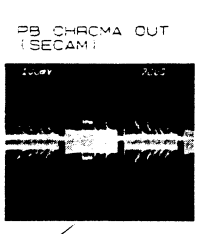


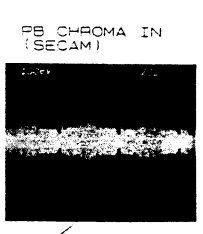


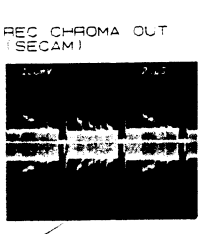












SEG ONLY

PB. H

S. DET

C. SYNC

IC901 LA7337
(SECAM CHROMA
(SIGNAL PROCESSOR)

TR907
H:ON

2. 2M
TRAP

PB. H

SECAM ON

TR905

2. 2M
TRAP

1. 1M
PEAKING

TR902

PB:ON

3. 58M
TRAP

TR903

SECAM
ON

TR901

E-E
ON

AL5V

TR904

AL5V

L:ON

SECAM

IC2 LC89978M(2/2)

1H/2H
DELAY

(CCD COMB FILTER)

TR5
(NTSC 3.58 OFF)

TR9

TR10

3. 58M

4.43M

3.58M

4HEAD ONLY

CDC

TR6

HEAD. CTL

S. DET

EXCEPT
SEG

IC1 LA71507ML
(VIDEO SIGNAL PROCESSOR)

PB. H

INV

C-CCD DRIVE2

Y-CCD DRIVE2

XO2 IN

XO2 OUT

XO1 IN

XO1 OUT

S. DET. LPF

S. DET. ADJ

S. DET OUT

SECAM
DET

IC3
4HEAD:LA70011M
2HEAD:LA70001M
(VIDEO/Hi-Fi AUDIO)
PRE AMP

BIAS

REC SP

REC LP

CURR AMP

AGC DET

REC SP:ON

REC LP:ON

VCC

V. ENV. DET

C. SYNC

V. SWP

HEAD. CTL

COMP. OUT

SP CH-1

SP CH-2

LP CH-1

LP CH-2

CH-1

CH-2

TR7

EF

V. SWP

4HEAD MODELS ONLY
(VS-4**. 3048CE)

AGC

TR73

TR72

Y/C MIX

REC. Y OUT

TRICK. H

0.01μ

TR77

SP/LP
L:ON
(DIP ON/OFF)

AL5V

3.7MHz
TRAP

PB EQ OUT

PB Y-FM IN

PEAKING CONT

TR1

2 SPEED MODELS ONLY

TR29

SP/LP
H:ON

TR28

SP/LP

REC. C OUT

KIL

C-LPF

BPF2

BPF1

PB Y-FM/C-IN

S-EQ

PB-EQ

SUB CONV

SUB BPF

MAIN CONV

ACC AMP

ACC DET

PB BGA-A

REC BGA

COMB

THRU

KIL B.D.

NAP

BPF

CNC

FM AGC

DOUBLE LIMIT

DEMOD

SUB LPF

REC EQ

MOD

MAIN ENPH

N.L. ENPH

DETAIL ENH

MAIN DE-EMPH
REC Y

CLAMP

CLAMP IN

LPF

YNR

Y CCD DRIVE

VCA-IN

CLAMP

N.L. DE-EN

CHR NC

PIC CTL

Y/C MIX

1/2

50HZ/60HZ

NTSC:H

SYNC SEPA

SYNC OUT

C. SYNC

AGC IN

VIDEO AGC

TR2

EF

1H DELAY

TR8

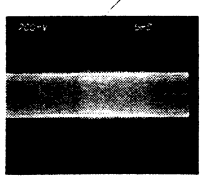
50/60

3.58MHz
FSC

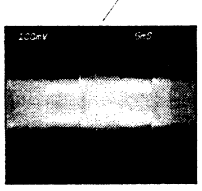
CK IN

NT:H

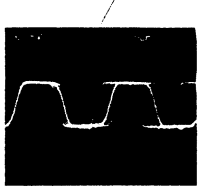
IC2 LC89978M(1/2)
(CCD COMB FILTER)



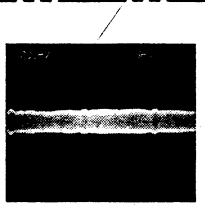
REC Y/C



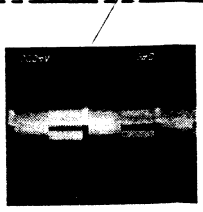
Y-FM/C-IN
(PB)



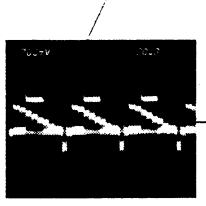
REC Y OUT



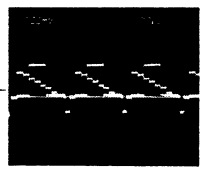
Y-FM IN(PB)



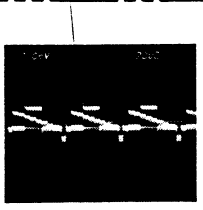
PEAKING CONT
(PB)



MAIN DE-EMPH
OUT(PB)



REC Y SIGNAL



COMB FILTER
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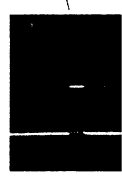

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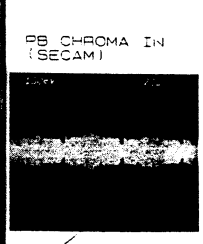
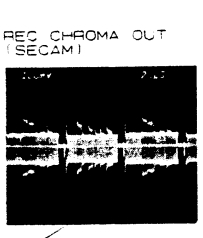
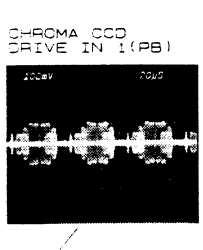
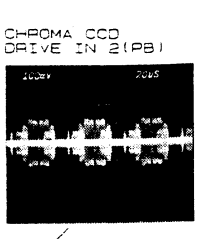
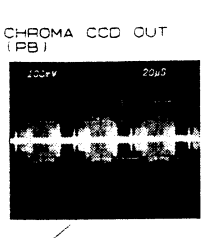
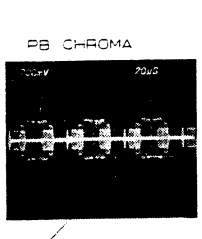


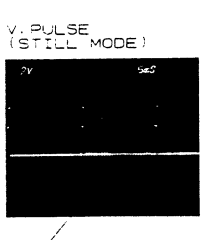


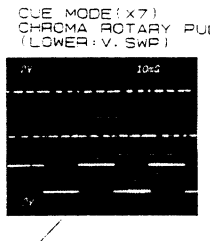










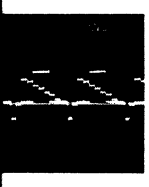


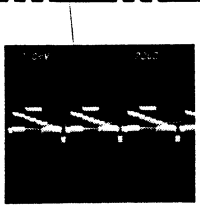
IC401 M37777MAA VXGSY
(SERVO/SYSTEM CONTROL MI-COM)

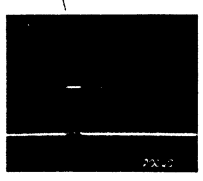
V. REC. VOL (11)
V. ENV. DET (10)
V. SWP (18)
COMP. OUT (17)
SP/LP (22)
HEAD. CTL (16)
C. SYNC (24)
S. DET (50)
CK. DET (8)
C. ROT (15)
VP (13)
CDC (26)
SECAM (27)
SEC/MES (28)
I2. SCL (71)
I2. SDA (72)

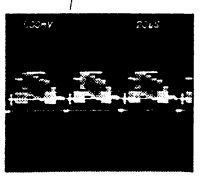
TR907
H:ON
PB. H
2. 2M TRAP
SECAM:ON
TR905
TR5
(NTSC 3. 58-OFF)
TR9
TR10
4.43M
3.58M
3.58M
4HEAD ONLY
CDC
TR6
HEAD. CTL
S. DET
JS1
EXCEPT SEG
I2. SCL
I2. SDA
VP
CK. DET
C. ROT
SERIAL DECODER
SECAM DET
S. DET. LPF
S. DET. ADJ
S. DET OUT
XO2 IN
XO2 OUT
XO1 IN
XO1 OUT
AL5V
KIL B.D.
NAP
BPF
CNC
N. L. DE-EN
DHP NC
PIC CTL
Y/C MIX
LPF
YNR
FBC
QV/QH INS
VIDEO AMP
1/2
CLAMP
Y CCD DRIVE
VCA-IN
50HZ/60Hz
NTSC:H
SYNC SEPA
SYNC OUT
C. SYNC
VIDEO AGC
AGC DET
AGC IN
VPS OUT
1H DELAY
50/60
58MHz
CK IN
NT:H
IC2 LC89978M(1/2)
(CCD COMB FILTER)
IC5 SDA5650X
VPS/POC DECODER
VPS/POC MODELS ONLY
EXCEPT EA. EK
SEC. MES
L:ON
TR102
(4. 4M CHROMA BY-PASS)
TR101
C. SYNC IN
V. IN
V. OUT
IC4 TC90A24F
(CHARACTOR GENERATOR)
TR103
fsc
OSD. CS
SYS. DATA
SYS. CLK
AV1. V
AV2. V
TU. V
EXCEPT SEG
ANT. IN
ANT. OUT
RF CONVERTOR
M0501
TU601
TUNER UNIT
IF601
VIF PCB
V. OUT
TR611
EXCEPT EA. EM. ES
G280EDG/EK/EO
G295EK. G480EDG
IC801 STV6400(I/O SELECTER)
IDL5V
EA-D ONLY
SDA
SCL
CLAMP
BUS
DIG BUFF1
DIG BUFF2
AUDIO SW
MUTE
-6dB
DEC. OUT
TR807
BUS DECODER
I2. SDA
I2. SCL
PJ301
AV2/DEC
DEC V. IN
DEC V. OUT
BLANK
R
G
B
SCART SOCKET PCB
L:ON
TR806
PJ802
AV1
V. OUT
V. IN
EXCEPT EA. EM. ES
EA. EM. ES ONLY
REAR RCA PCB
PJ201
REAR V. IN
REAR V. OUT
TR801
EA. EM. ES
G280EDG/EK/EO
G295EK. G480EDG ONLY
TR1
FRONT V. IN
FRONT INPUT PCB
G285. 485EA
G296. 496EDG
G296. 496EO
G293. 493EM
G296. 496SEG
ONLY
MAIN PCB

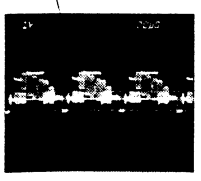
PB Y SIGNAL LINE
REC Y SIGNAL LINE
PB CHROMA SIGNAL LINE
REC/RGB CHROMA SIGNAL LINE


Y SIGNAL

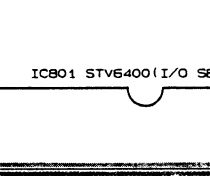

COMB FILTER OUT(PB)

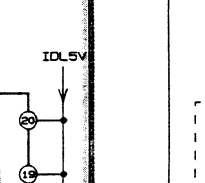

C. SYNC OUT


AV1 VIDEO IN


VIDEO OUT(PB)

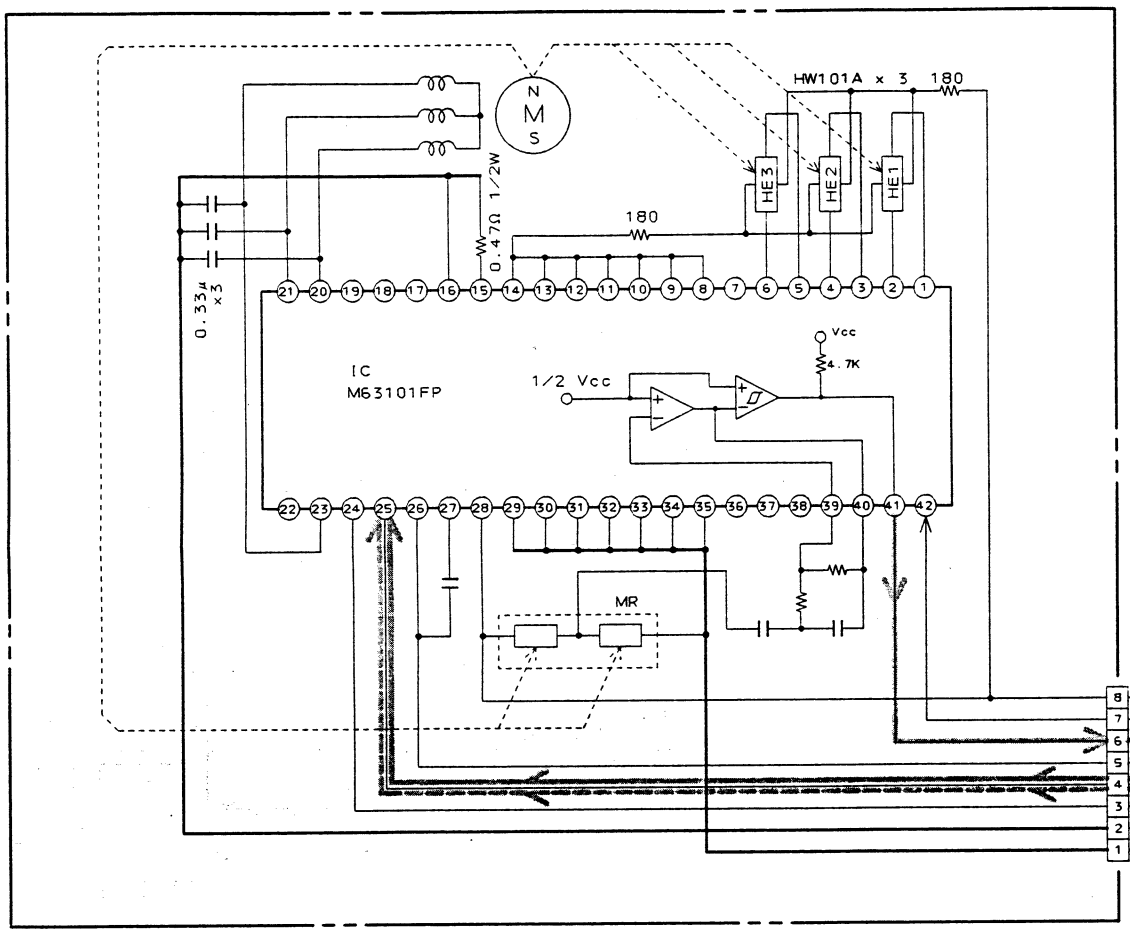
IMS OUT(PB)


VIDEO OUT(PB)

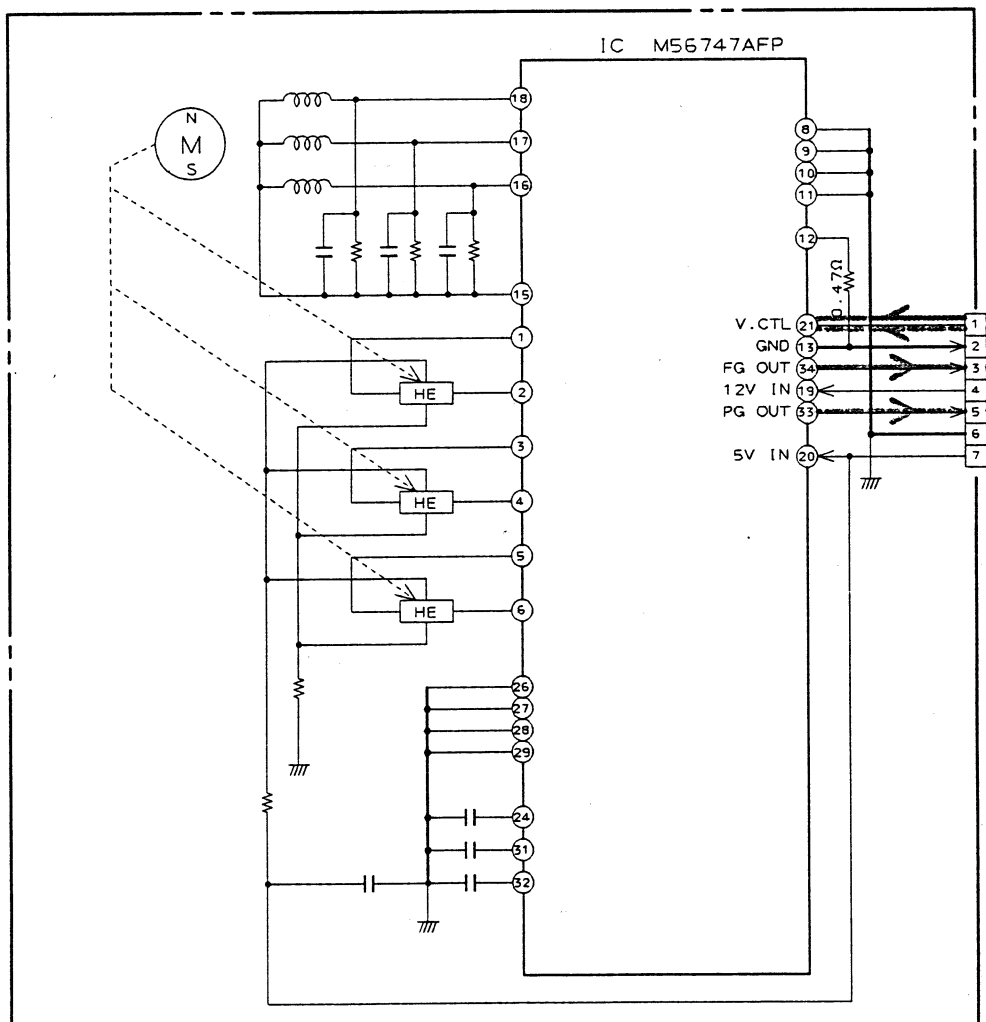

VIDEO IN

VIDEO BLOCK DIAGRAM

NO. 4-1 V128151M

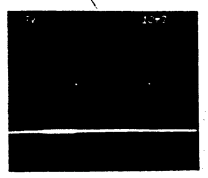


CAPSTAN MOTOR BLOCK (F2QSB)



DRUM MOTOR BLOCK (F20EL71)

CM FG IN



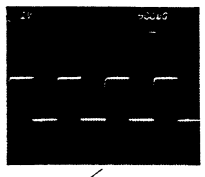
DM PG IN

DM FG I

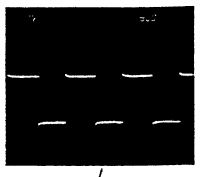
NOTE: PHOTOGRAPHS EXCEPT [REC CTL OUT] WERE TAKEN DURING PB MODE.
EXCEPT [REC CTL OUT, ENVELOPE DET, SWP] PHOTOGRAPH'S SECOND LINE FROM THE BOTTOM IS DC 0V.

: CAP
: CAP
: DRU
: DRU

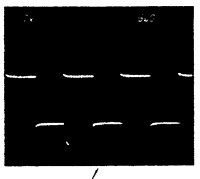
CM FG IN



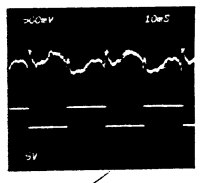
CM ERROR OUT



DM ERROR OUT



VIDEO ENVELOPE DET
(LOWER V.SWP)



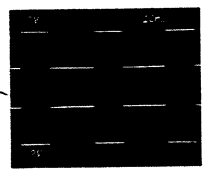
IC401 M37777MAA-VXGS
(SERVO/SYSTEM CONTROL MI-COM)

IC3 LA70011M
(VIDEO PRE AMP)

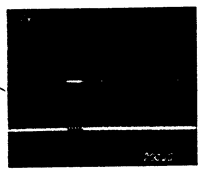
CH1
CH2
V.ENV DET
V.SWP
V.ENV.DET
VIDEO HEAD

(AUTO TRACKING CONT) 10
75 F/R
85 CM FG (SPEED)
77 CM PWM
74 CM STOP
78 DM PWM
87 DM FG (SPEED)
86 DM PG (PHASE)
17 COMP.OUT
16 HEAD.CTL
91 CTL-
92 CTL+
WF1
5
6
CONTROL HEAD
CM PHASE/SPEED ERROR DETECT
REC /PB SW
(PB) (PHASE)
(REC)
25Hz F.F
LPF
LPF
DM PHASE/SPEED ERROR DETECT
V.SYNC SEPA
84 C SYNC
FROM IC1 57 PIN (SYNC OUT)
V.SWP 18 TO PRE AMP SECTION
CTL AMP OUT 97
TR401 CTL

REC CTL OUT
(UPPER:CTL+
LOWER:CTL-)



C SYNC IN

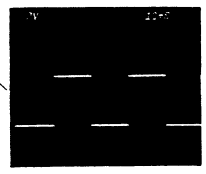


X1 IN 38
X1 OUT 39
X2 IN 41
X2 OUT 42
SYS DATA 68
FLD DATA 69
SYS CLK 70
FLD STB 66
CTL GAIN 64

X401
16MHz
X402
32.768K

TR408
H:ON

CTL AMP GAIN CONTROL



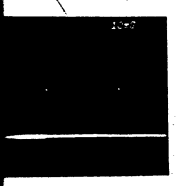
VIDEO SWP

MAIN PCB

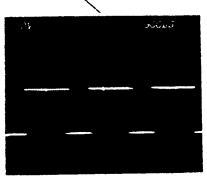
6 SYS DATA
5 FLD DATA
8 SYS CLK
9 FLD STB

IC101 μPD16312GB
(OPE MI-COM)

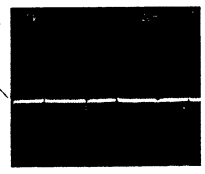
OPERATION PCB



DM PG IN



DM FG IN

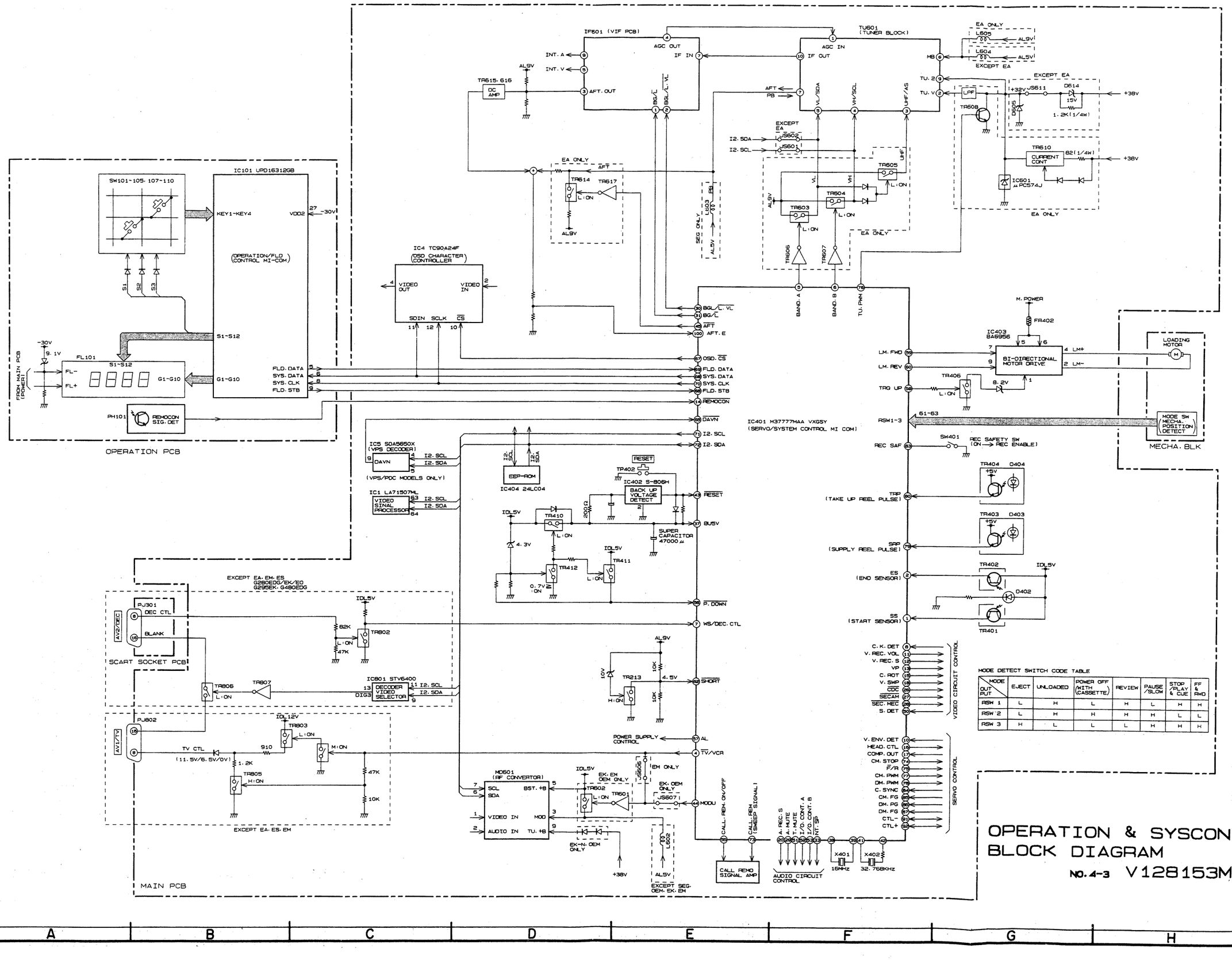


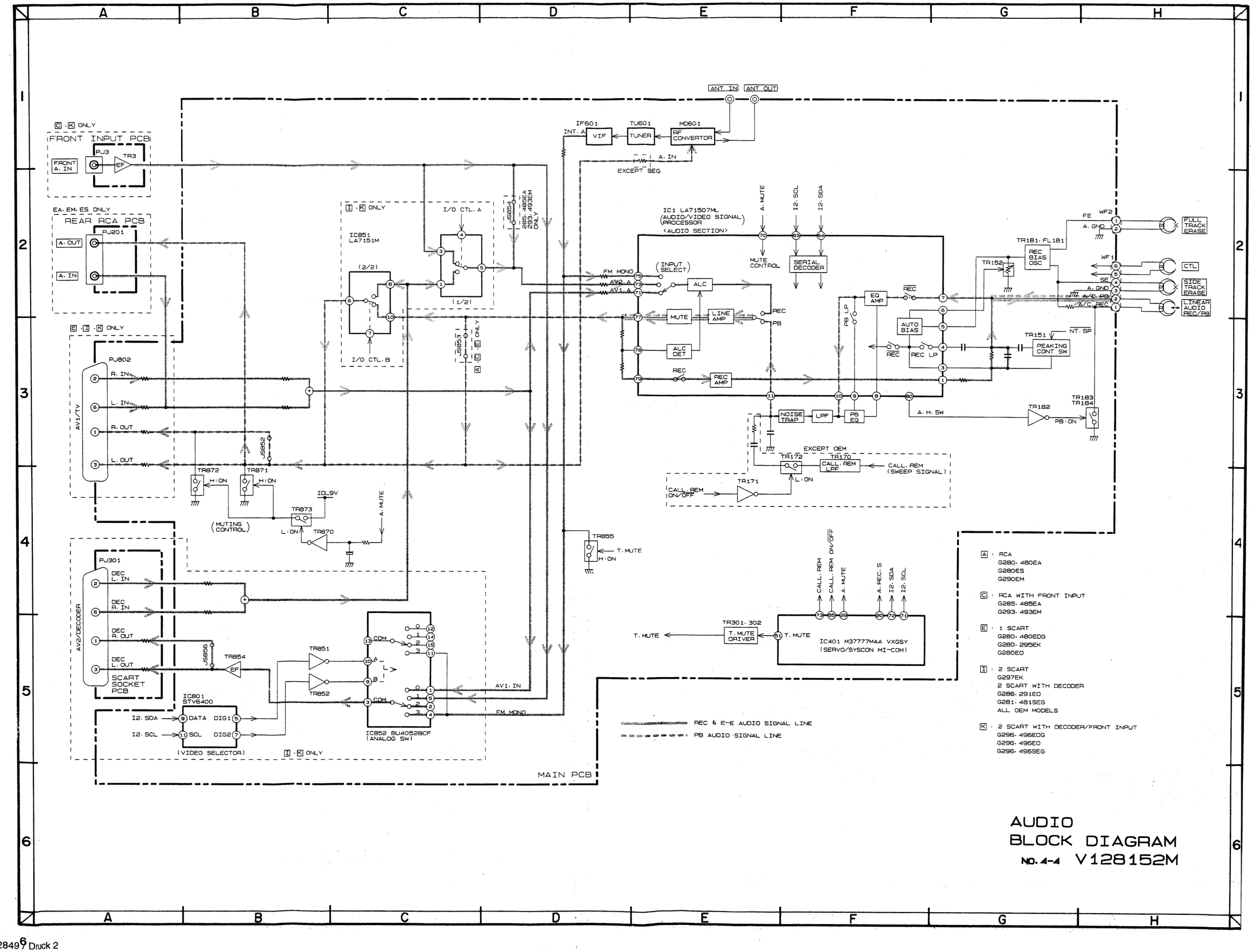
CTL AMP OUT

: CAPSTAN MOTOR SPEED CONTROL LINE
: CAPSTAN MOTOR PHASE CONTROL LINE
: DRUM MOTOR SPEED CONTROL LINE
: DRUM MOTOR PHASE CONTROL LINE

SERVO BLOCK DIAGRAM

NO. 4-2 V128154M


IC101 UPD16312GB
SW101~105. 107~110
KEY1~KEY4
VDD2
-30V
(OPERATION/FLD CONTROL MI-COM)
S1
S2
S3
S1~S12
G1~G10
FL101
FL-
FL+
9. 1V
FROM MAIN PCB (POWER)
FLD. DATA
SYS. DATA
SYS. CLK
FLD. STB
PH101
REMOCON SIG. DET
OPERATION PCB
IF601 (VIF PCB)
AGC OUT
IF IN
INT. A
INT. V
AFT. OUT
TA615. 616 OC AMP
ALSV
BGL/L
BGL/L. VL
TU501 (TUNER BLOCK)
AGC IN
IF OUT
AFT
PB
VL/SDA
VH/SCL
UHF/AS
MB
TU. 2
TU. V
EA ONLY
L605
L604
EXCEPT EA
+32V
VS611
D614
15V
1. 2K(1/4W)
D605
LPF
TR608
+38V
EXCEPT EA
JS602
JS601
I2. SDA
I2. SCL
TR610
CURRENT CONT
82(1/4W)
IC501 μPC574J
EA ONLY
TR605
TR604
TR603
TR606
TR607
UHF
VL
VH
L: ON
TR614
TR617
AFT
SEG ONLY
L603
IC4 TC90A24F
(OSD CHARACTER CONTROLLER)
VIDEO OUT
VIDEO IN
SDIN
SCLK
CS
BAND. A
BAND. B
TU. PWM
BGL/L. VL
BGL/L
AFT
AFT. E
OSD. CS
FLD. DATA
SYS. DATA
SYS. CLK
FLD. STB
REMOCON
DAVN
I2. SCL
I2. SDA
RESET
BUSY
P. DOWN
WS/DEC. CTL
SHORT
AL
TV/VCR
MODU
IC401 M37777MAA VXGSY
(SERVO/SYSTEM CONTROL MI COM)
IC5 SDA5650X
(VPS DECODER)
DAVN
(VPS/PDC MODELS ONLY)
IC1 LA71507ML
VIDEO SINAL PROCESSOR
EEP-ROM
IC404 24LC04
RESET
TP402
IC402 S-806H
BACK UP VOLTAGE DETECT
200Ω
TR410
TR411
TR412
4. 3V
0. 7V
SUPER CAPACITOR 47000μ
IDL5V
M. POWER
FR402
IC403 BA6956
BI-DIRECTIONAL MOTOR DRIVE
LM. FWD
LM. REV
LM+
LM-
LOADING MOTOR
TRQ UP
TR406
8. 2V
L: ON
51~63
RSW1~3
MODE SW MECHA. POSITION DETECT
MECHA. BLK
REC SAF
SW401
REC SAFETY SW (ON → REC ENABLE)
TRP
(TAKE UP REEL PULSE)
TR404
D404
+5V
SRP
(SUPPLY REEL PULSE)
TR403
D403
ES
(END SENSOR)
TR402
D402
SS
(START SENSOR)
TR401
C. K. DET
V. REC. VOL
V. REC. S
VP
C. ROT
V. SWP
CDE
SECAN
SEC. MEC
S. DET
VIDEO CIRCUIT CONTROL
V. ENV. DET
HEAD. CTL
COMP. OUT
CM. STOP
F/R
CM. PWM
DM. PWM
C. SYNC
CM. FG
DM. PG
DM. FG
CTL-
CTL+
SERVO CONTROL
MODE DETECT SWITCH CODE TABLE
MODE / OUTPUT
EJECT
UNLOADED
POWER OFF (WITH CASSETTE)
REVIEW
PAUSE /SLOW
STOP /PLAY & CUE
FF & RWD
RSW 1
RSW 2
RSW 3
EXCEPT EA. EM. ES
G280EDG/EK/EO
G295EK. G480EDG
PJ301
DEC CTL
BLANK
AV2/DEC
SCART SOCKET PCB
TR802
82K
47K
TR805
TR807
IC801 STV6400
DECODER
VIDEO SELECTOR
PJ802
AV1/TV
TV CTL
(11. 5V/6. 5V/0V)
910
1. 2K
TR803
10K
EXCEPT EA. ES. EM
MAIN PCB
MD601
(RF CONVERTOR)
SCL
SDA
VIDEO IN
AUDIO IN
BST. +B
MOD
TU. +B
EK. EM OEM ONLY
EK. OEM ONLY
EM ONLY
EK-N. OEM ONLY
TR602
TR601
JS606
JS607
+38V
AL9V
EXCEPT SEG. OEM. EK. EM
CALL. REM. ON/OFF
CALL. REM (SWEEP SIGNAL)
CALL REMO SIGNAL AMP
A. REC. S
A. MUTE
T. MUTE
I/O. CONT. A
I/O. CONT. B
INT. SP
AUDIO CIRCUIT CONTROL
X401
16MHz
X402
32. 768KHz
OPERATION & SYSCON BLOCK DIAGRAM
NO. 4-3 V128153M



A : RCA
G280. 480EA
G280ES
G290EM

C : RCA WITH FRONT INPUT
G285. 485EA
G293. 493EM

E : 1 SCART
G280. 480EDG
G280. 295EK
G280EO

I : 2 SCART
G297EK
2 SCART WITH DECODER
G286. 291EO
G281. 481SEG
ALL OEM MODELS

K : 2 SCART WITH DECODER/FRONT INPUT
G296. 496EDG
G296. 496EO
G296. 496SEG

AUDIO BLOCK DIAGRAM

NO. 4-4 V128152M

PJ2018
REAR RCA PCB
V1285A502D
VIDEO
AUDIO
INPUT
OUTPUT
P201
1 R.V.IN
2 A.GND
3 R.L.IN
4 N.C
5 A.GND
6 N.C
7 R.L.OUT
8 A.GND
9 R.V.OUT
EA.EM.ES ONLY
MD601
RF IN/OUT
P803
1 R.V.IN
2 A.GND
3 R.L.IN
4 R.R.IN
5 A.GND
6 R.R.OUT
7 R.L.OUT
8 A.GND
9 R.V.OUT
PJ802
AV1
EXCEPT EA.EM.ES
P405
1 DM.CONT
2 M.GND
3 DM.FG
4 DM.POWER
5 DM.PG
6 D.GND
7 SA.10.5V
DRUM MOTOR
WF2
1 FE
2 A.GND
FE HEAD
MECHA BLK
P1
IF601
1 BG/L
2 BGL/L.VL
3 AFT.OUT
4 AGC.OUT
5 INT.V
6 A.GND1
7 IF
8 VCC
9 INT.A
10 NC1
11 NC2
7P EXCEPT SEG
9P ONLY SEG
VX-VIF-NORMAL PCB
F5001A5010
EA.EK.EM.EO
ES.OEM ONLY
VX-VIF-SEG PCB
F5001A5020
SEG ONLY
VX-VIF-EDG PCB
F5001A5030
EDG ONLY
MAIN PCB
V1285A5010
P301
1 AV2.A.R
2 AV2.A.L
3 A.GND
4 AV2.V
5 10.5V
P4
1 AV2.A
2 N.C
3 A.GND
4 AV2.V
5 10.5V
FRONT INPUT
PJ1
PJ3
VIDEO
AUDIO
FRONT INPUT PCB V1285A502B
G285.485EA
G293.493EM
G296.496EDG
G296.496EO
G296.496SEG
ONLY
ROTARY TR
DETEC
OPERA
DETEC
OPERA

CONNECTION DIAGRAM

NO. 10-1 V1281810M

	1-2H	2-2H	4H
JS72	-	-	O
JS73	O	O	-
C73	-	68P	39P
C74	47P	0.01	0.01
C77	68P	68P	39P
R71(F)	1.2K	2K	2K
R72	510	560	680
R74	560	560	680
P2	4P	4P	5P
L72	JW	180	180

INDICATED VOLTAGES WERE MEASURED DURING PB MODE.
(TAPE USED:PAL COLOUR BAR TAPE)
(TAPE SPEED:SP)
(SEG SECTION:SECAM COLOUR BAR TAPE)
( ): 3.58N:SC MODE

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN Ω
ALL CAPACITORS IN μF

MAIN 1/5
(VIDEO & AUDIO BLK)
SCHEMATIC DIAGRAM

NO. 10-2 V1281801M

MAIN 2/5 (POWER SUPPLY BLK) SCHEMATIC DIAGRAM

NO. 10-3 V1281802M

	TR201	TR202
EM ONLY	2SK2768-01MR	2SC3616
EXCEPT EM	2SC4908	2SD2144

	TR203	R210	R212
EM ONLY	2SC3616	0.33 (1W)	820 (1/4W)
EXCEPT EM	—	0.56 (1W)	1.5K (1/4W)

	JS206	C242	—	TR202
EM ONLY	—	8200P /16(M)	—	2SC3616
EXCEPT EM	○	—	—	2SD2144

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN (P-PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV
[M] IS MYLAR CAPACITOR

OEM MODELS ARE SAME AS G267E0 MODEL.

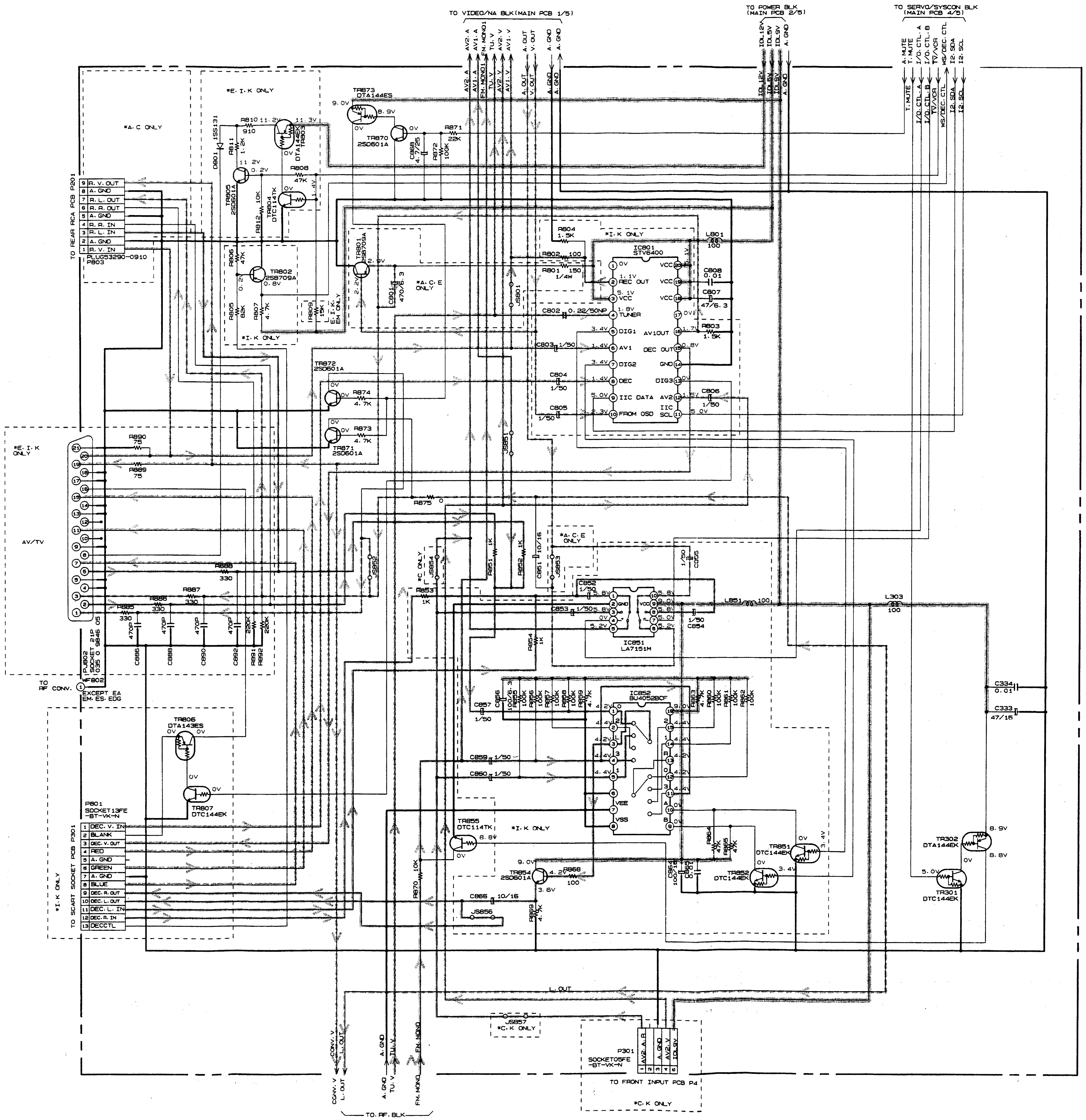
B(POWER SUPPLY) LINE

*INDICATED VOLTAGES WERE MEASURED DURING E-E(STOP)MODE.
THE DC VOLTMETER'S NEGATIVE INPUT WAS CONNECTED TO THE Ⓐ POINT WHEN THE PRIMARY SECTION WAS MEASURED.
*THE PRIMARY INPUT VOLTAGE WAS AC220V.

CAUTION:
AS THE PRIMARY SIDE OF THE POWER SECTION CONTAINS HIGH VOLTAGE. THERE IS RISK OF ELECTRIC SHOCK. BE SURE TO USE EXTREME CAUTION.

WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSMENT: ⚠ ET ▨ ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL. NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT


TO VIDEO/NA BLK(MAIN PCB 1/5)
TO POWER BLK (MAIN PCB 2/5)
TO SERVO/SYSCON BLK (MAIN PCB 4/5)
AV2. A
AV1. A
FM. MONO1
TU. V
AV2. V
AV1. V
A. OUT
V. OUT
A. GND
IDL12V
IDL5V
IDL9V
A. MUTE
T. MUTE
I/O. CTL. A
I/O. CTL. B
TV/VCR
WS/DEC. CTL
I2. SDA
I2. SCL
*A. C ONLY
*E. I. K ONLY
*I. K ONLY
*A. C. E ONLY
*C ONLY
*C. K ONLY
TO REAR RCA PCB P201
PLUG53290-0910
P803
R. V. OUT
A. GND
R. L. OUT
R. R. OUT
R. R. IN
R. L. IN
R. V. IN
IC801
STV6400
REC OUT
TUNER
DIG1
AV1
DIG2
DEC
IIC DATA
FROM OSD
AV1OUT
DEC OUT
GND
DIG3
AV2
IIC SCL
VCC
IC851
LA7151M
IC852
BU4052BCF
VEE
VSS
AV/TV
PJ802
SOCKET 21P
9846 05
035 0
WF802
TO RF CONV.
EXCEPT EA EM. ES. EDG
P801
SOCKET13FE
-BT-VK-N
TO SCART SOCKET PCB P301
DEC. V. IN
BLANK
DEC. V. OUT
RED
GREEN
BLUE
DEC. R. OUT
DEC. L. OUT
DEC. L. IN
DEC. R. IN
DECCTL
P301
SOCKET05FE
-BT-VK-N
TO FRONT INPUT PCB P4
L. OUT
CONV. V
A. GND
TU. V
FM. MONO
TO. RF. BLK

*A: RCA (NORMAL)
G280. 480EA
G280ES
G290EM

*C: RCA WITH FRONT (NORMAL)
G285. 485EA
G293. 493EM

*E: 1SCART (NORMAL)
G280. 480EDG
G280. 295EK
G280EO

*I: 2SCART WITH DEC (NORMAL)
G286. 291EO
G281. 481SEG
3008CE. 3018CE. 3048CE. 1638NE
4018NE. 6158NE. 6258NE
4008NE. 3008NE. 3018NE

*I: 2SCART (NORMAL)
G297EK

*K: 2SCART FRONT WITH DEC (NORMAL)
G296. 496EDG G496EK
G296. 496EO
G296. 496SEG

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF
ALL INDUCTORS IN μH

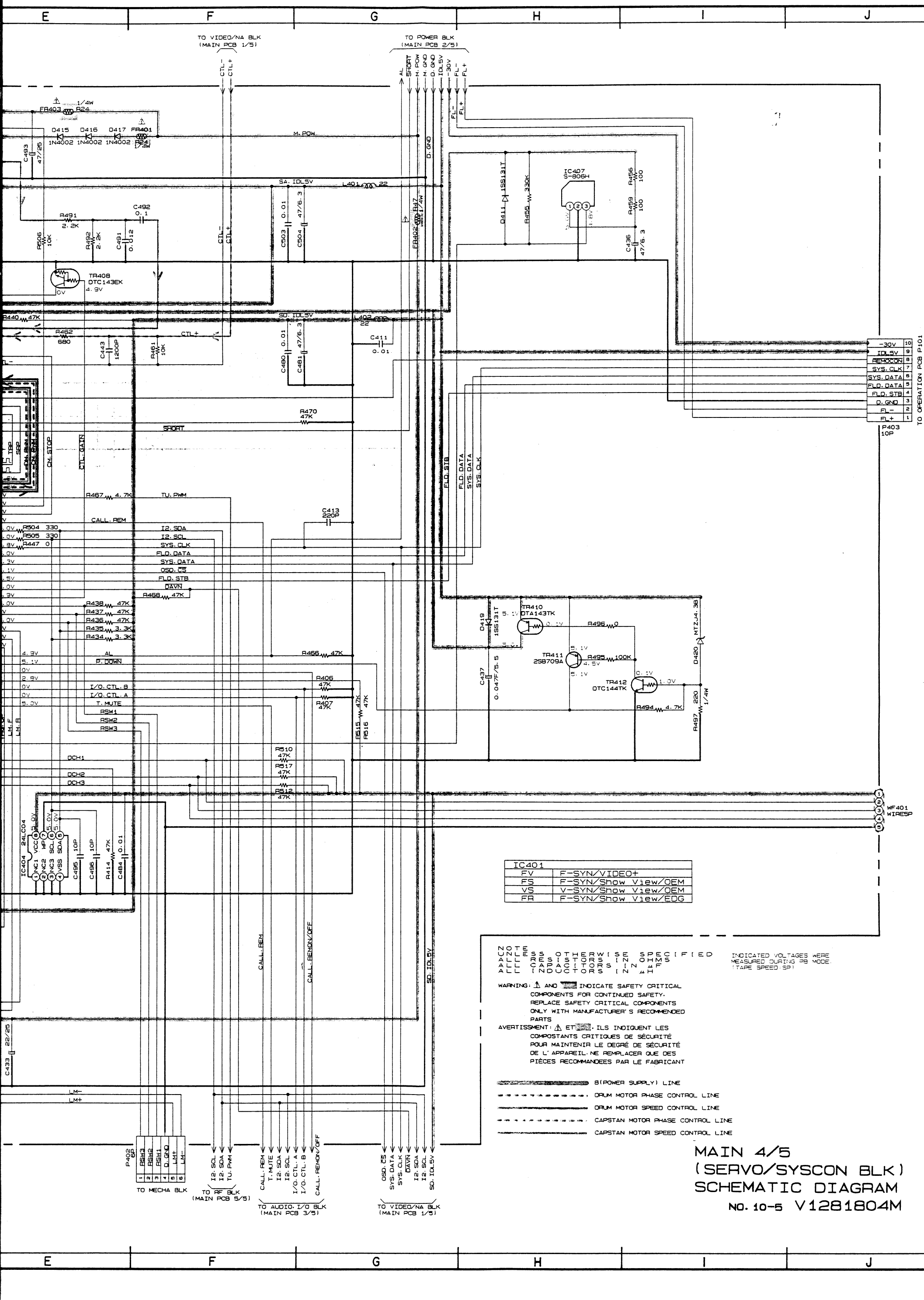
INDICATED VOLTAGES WERE MEASURED DURING PB MODE.
(TAPE SPEED: SP)

- B (POWER SUPPLY) LINE
- PB AUDIO SIGNAL LINE
- REC/E-E AUDIO SIGNAL LINE
- PB VIDEO SIGNAL LINE
- REC/E-E VIDEO SIGNAL LINE

MAIN 3/5 (I/O BLK) SCHEMATIC DIAGRAM

NO. 10-4 V1281803M

TO DRUM MORTOR
P405 7P
SA. IDL5V
D. GND
DM. PG
DM. POWER
DM. FG
M. GND
DM. CONT
TO CAPSTAN MORTOR
P401 8P
D. GND
M. GND
I. LIMIT
CM. CONT
CM. POW
CM. FG
F/R
SA. IDL5V
TO VIDEO/ (MAIN PCB
CTL-
CTL+
FR403 1/4W R24
D415 1N4002
D416 1N4002
D417 1N4002
FR401 R24 1/4W
C499 0.01
C500 47/6.3
C465 47/25
C493 47/25
R410 2.2K
C405 0.1
IC402
BA4558F-E2
R405 10K
R439 1K
C453 0.01
C452 0.047
TR405 DTC114EK
R408 3.9K
R409 4.7K
R417 10K
C502 0.01
R491 2.2K
C492 0.1
R506 10K
R492 2.2K
C491 0.012
TR408 DTC143EK
4.9V
C403 2200P
C401 0.033
C404 2200P
C402 0.033
R403 22K
R401 150K
C410 0.01 EA ONLY
C450 1/50
REC SAFETY
SW401 MPU1039ML80
C454 33/10
C449 4700P
R401 10K
R446 47K
R402 68K
R457 47K
R458 47K
R432 10K
C498 0.01
R445 47K
DM. PG
R440 47K
R462 680
TP401 CTL
R463 100
C448 0.22
C451 22/6.3
C445 10/16
C444 0.01
C443 1200P
R461 10K
CTL+
CTL-
REMOCON
SHORT
CM. STOP
CTL. GAIN
TO AF BLK (MAIN PCB 5/5)
AFT. E
TV/VCR
BAND. A
BAND. B
MODU
AFT
BGL/L. VL
BG/L
TP403 VJ
R498 1K
R499 1K
TO VIDEO/NA BLK (MAIN PCB 1/5)
CK. DET
V. ENV. DET
V. REC. VOL
V. REC. S
VP
C. SYNC
C. ROT
HEAD. CTL
COMP. OUT
V. SWP
CDC
SECAM
SEC. MES
A. MUTE
SP/LP
IC401 M37777MAA VXGSY
SS
ES
NC5
BAND. A
BAND. B
WS/DEC. CTL
CK. DET
HIFI. ENV. DET
V. ENV. DET
V. REC. VOL
V. REC. S
VP
REMOCON
C. ROT
HEAD. CTL
COMP. OUT
V. SWP
A. SWP
A. REC. S
NC8
NC9
NC6
NC1
SP/LP
CDC
SECAM
SEC. MEC
A. MUTE
BGL/L. VL
NC4
NJB
NJA
CLKSET
VCC
XTAL. 1. IN
XTAL. 1. OUT
VSS
XTAL. 2. IN
XTAL. 2. OUT
RESET
MODU
AFT
VJ
DCH1
DCH2
DCH3
S. DET
TRQ. UP
LM. F
LM. R
CM. PWM
TU. PWM
F/R
CM. STOP
CALL. REM
I2. SDA
I2. SCL
SYS. CLK
FLD. DATA
SYS. DATA
OSD. CS
FLD. STB
DAVN
CTL. GAIN
RSW1
RSW2
RSW3
LM. R
LM. F
TRQ. UP
AL
P. DOWN
CALL. REMON/OFF
TEST. CTL
I/O. CTL. B
I/O. CTL. A
T. MUTE
R504 330
R505 330
R447 0
R467 4.7K
R468 47K
R438 47K
R437 47K
R436 47K
R435 3.3K
R434 3.3K
TO AUDIO. I/O BLK (MAIN PCB 3/5)
WS/DEC. CTL
A. MUTE
TV/VCR
A. REC. S
R514 150K
R415 47K
R413 47K
R502 47K
R418 47K
R500 47K
R430 47K
R419 47K
R469 47K
R431 47K
R412 47K
C442 47/6.3
R518 47K
R519 47K
C441 0.1
C423 0.01
RESET
MODU
TP402
R441 1M
R443 10M
X401 APS-1011A 16MHZ
R442 1K
X402 VT-200 32.768KHZ
R449 330K
C424 CH15P
C425 CH18P
C426 CH18P
C427 CH18P
R411 47K
S. DET
SD. IDL5V
IC404 24LC04
VCC
WP
SCL
SDA
VSS
C495 10P
C496 10P
R414 47K
C484 0.01
D404 GL4800
D402 GL451
D403 GL4800
TR404
PT4800
TR401 PT493F
TR402 PT493F
TR403
JS401
JS402
R420 120 1/4W
R421 18K
C406 0.01
C407 0.01
R422 18K
R423 27K
C408 0.01
R424 120 1/4W
C409 0.01
R426 27K
R503 47K
IC403 BA6956
VREF
LM-
M. GND1
LM+
VM
VCC
LM. F
M. GND2
LM. R
R452 47K
R451 18K
TR406 2SB709A
D407 MTZ8.2B
C432 0.01
C433 22/25
NT. SP
LM-
LM+
P402 6P
BSW3
BSW2
BSW1
D. GND
LM+
LM-
TO MECHA BLK
I2. SCL
I2. SDA
TU. PWM
S. DET
NT. SP
TO VIDEO/NA BLK (MAIN PCB 1/5)



IC401	
FV	F-SYN/VIDEO+
FS	F-SYN/Show View/OEM
VS	V-SYN/Show View/OEM
FR	F-SYN/Show View/EDG

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF
ALL INDUCTORS IN μH

INDICATED VOLTAGES WERE MEASURED DURING PB MODE. (TAPE SPEED: SP)

WARNING: ⚠ AND ▭ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET ▭. ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL. NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

B(POWER SUPPLY) LINE
DRUM MOTOR PHASE CONTROL LINE
DRUM MOTOR SPEED CONTROL LINE
CAPSTAN MOTOR PHASE CONTROL LINE
CAPSTAN MOTOR SPEED CONTROL LINE

MAIN 4/5 (SERVO/SYSCON BLK) SCHEMATIC DIAGRAM

NO. 10-5 V1281804M

*2

	EA	EXCEPT EA
IC601	UPC574J	–
TR610	2SB709A (CHIP)	–
D605	–	MTZJ33A
D606	1SS131T	–
D607	1SS131T	–
D614	–	MTZJ15C
R620	33K	–
R630	82(1/4W)	1.2K(1/4W)
JS611	–	○
JS612	○	○

*1

	MD601	TU601	IF601
EA	YAA21-1146G	TELE1-012A	VX-NOR-EA
EK	MDLP3E008C	TEL87-021A	VX-NOR-EK
G297EK		TELE9-111A	VX-NOR-EK
ES	YAA21-1046H		VX-NOR-EK
EM	YAA21-0808G		VX-NOR-EOG
EOG	YAA21-1108G		VX-NOR-EOG
EO	YAA21-1045H		VX-NOR-EOG
SEG	MDLK6Z333A	115-8-8026ER	VX-NOR-SEG
H. J. K	MDLP3E008C	TELE9-111A	VX-NOR-EOG

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/10W (J)
ALL INDUCTORS IN μH (J)
ALL ELECTOLYTIC CAPACITORS IN μF/WV
[M] IS MYLAR CAPACITOR

- B(POWER SUPPLY) LINE
- PB AUDIO SIGNAL LINE
- REC/E-E AUDIO SIGNAL LINE
- PB VIDEO SIGNAL LINE
- REC/E-E VIDEO SIGNAL LINE
- IF SIGNAL LINE

INDICATED VOLTAGES WERE MEASURED DURING E-E(STOP)MODE.
( ):EA ONLY

MAIN 5/5 (RF BLK) SCHEMATIC DIAGRAM

NO. 10-6 V1281805M

PRINCIPAL PARTS LOCATION

ICs

IC1	D5
IC2	C4
IC3	E5
IC5	C2
IC201	B4
IC202	A2
IC301	F4
IC401	E1,2
IC402	G2
IC403	G1
IC404	G2
IC407	D1
IC601	H6
IC801	D6
IC851	G6
IC852	F6
IC901	C5,6

TRANSISTORS

TR1	D5
TR2	D5
TR5	D4
TR6	D4
TR7	D5
TR8	C4
TR9	D4
TR10	D4
TR28	D6
TR29	D6
TR72	E4
TR73	E4
TR77	E4
TR101	C6
TR102	C6
TR103	C6
TR151	E4
TR152	E4
TR170	D3
TR171	D3
TR172	D3
TR181	E5
TR182	E5
TR183	E5
TR184	E5
TR201	A4
TR202	A5
TR203	A5
TR205	B3
TR206	B4
TR207	B4
TR209	B3
TR210	A2
TR211	B2
TR212	B3
TR213	B3
TR301	G3
TR302	G4
TR401	B3
TR402	G3
TR403	F2
TR404	D2
TR405	G2
TR406	G1
TR408	G1
TR410	D2
TR411	D2
TR412	D2
TR413	E2
TR414	D2
TR601	H6
TR602	H6
TR603	H5
TR604	H5
TR605	H5
TR606	H5
TR607	H5
TR608	H3
TR609	H6
TR610	H6
TR611	H3
TR614	H3
TR615	H3
TR616	H3
TR617	H3
TR801	D6
TR802	G,H6
TR803	G6
TR804	G6
TR805	G6
TR806	E6
TR807	E6
TR851	E6
TR852	E6
TR854	E6
TR855	G5
TR870	G5
TR871	G6
TR872	G6
TR873	H5
TR901	B6
TR902	C6
TR903	C5
TR904	C5
TR905	C5
TR906	B5
TR907	B6

CONNECTORS

P2	F5
P301	H3,4
P401	C3
P402	B1,2
P403	A1
P405	G5
P801	E,F6
P803	G6
PJ802	E,F6

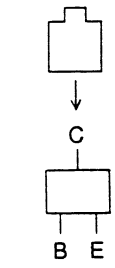
WIRES

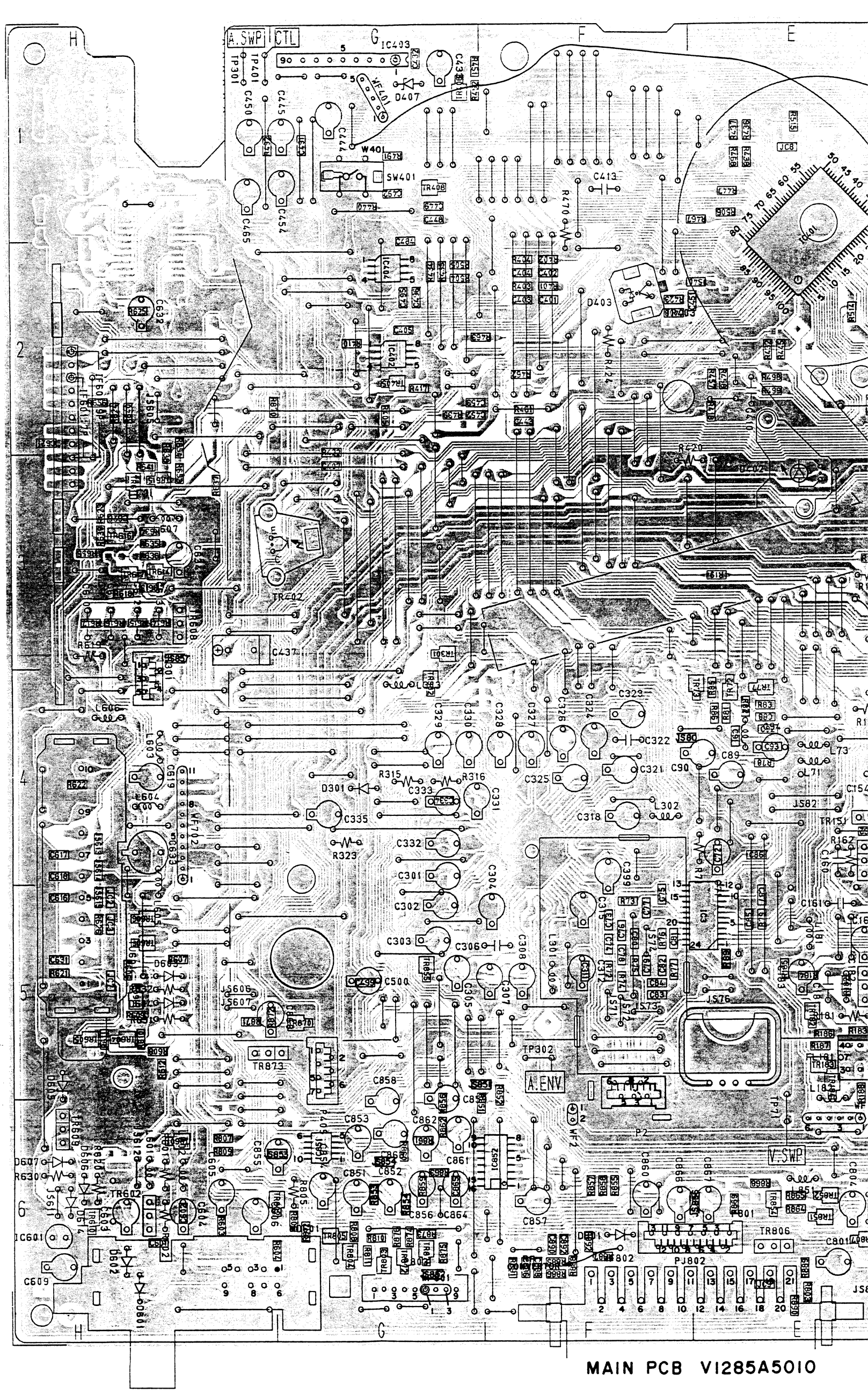
WF1	E6
WF2	F6
WF401	G1
WF701	H2
WF702	H4
WF801	G6

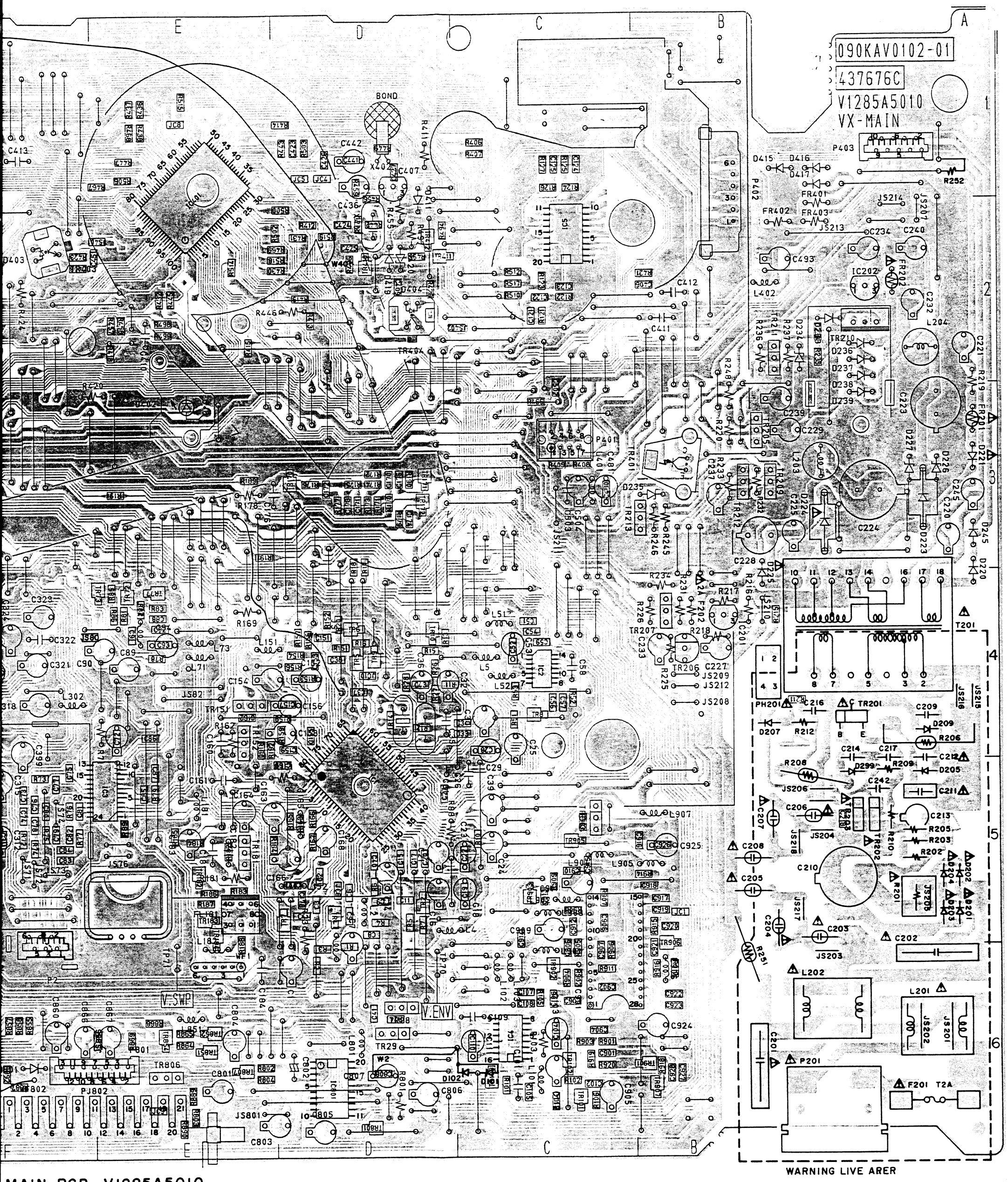
TEST POINTS

TP70	D6
TP71	E6
TP301	H1
TP302	F5
TP401	H1

SINGLE CHIP TRANSISTOR





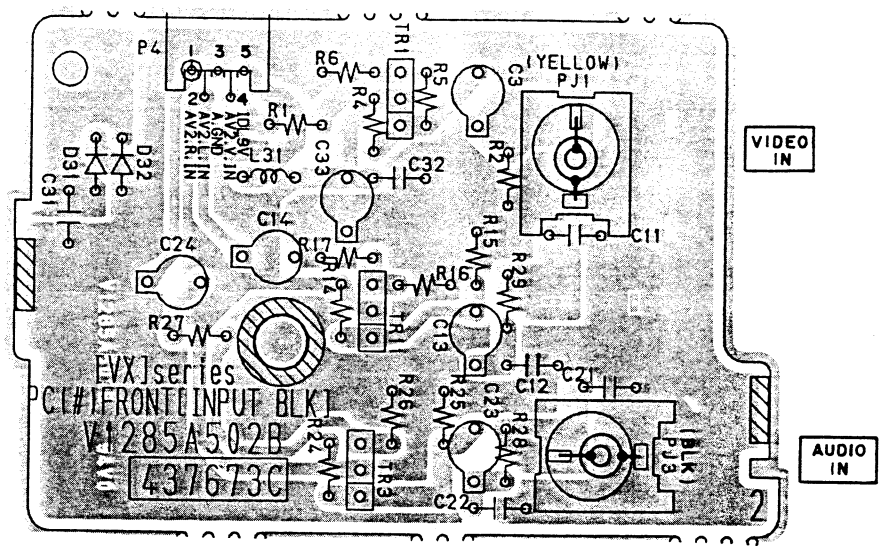


MAIN PCB V1285A5010

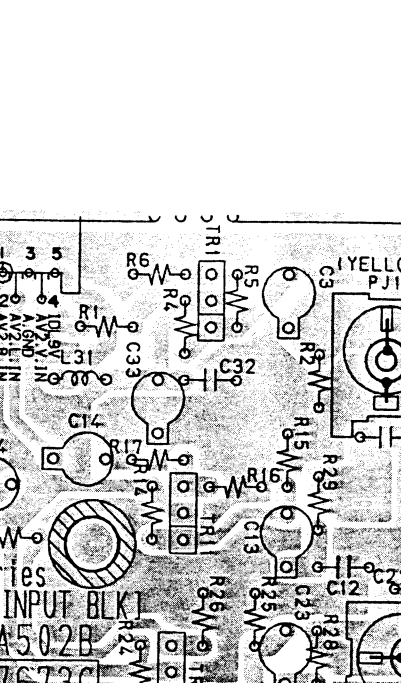
NOTE:
PARTS DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.

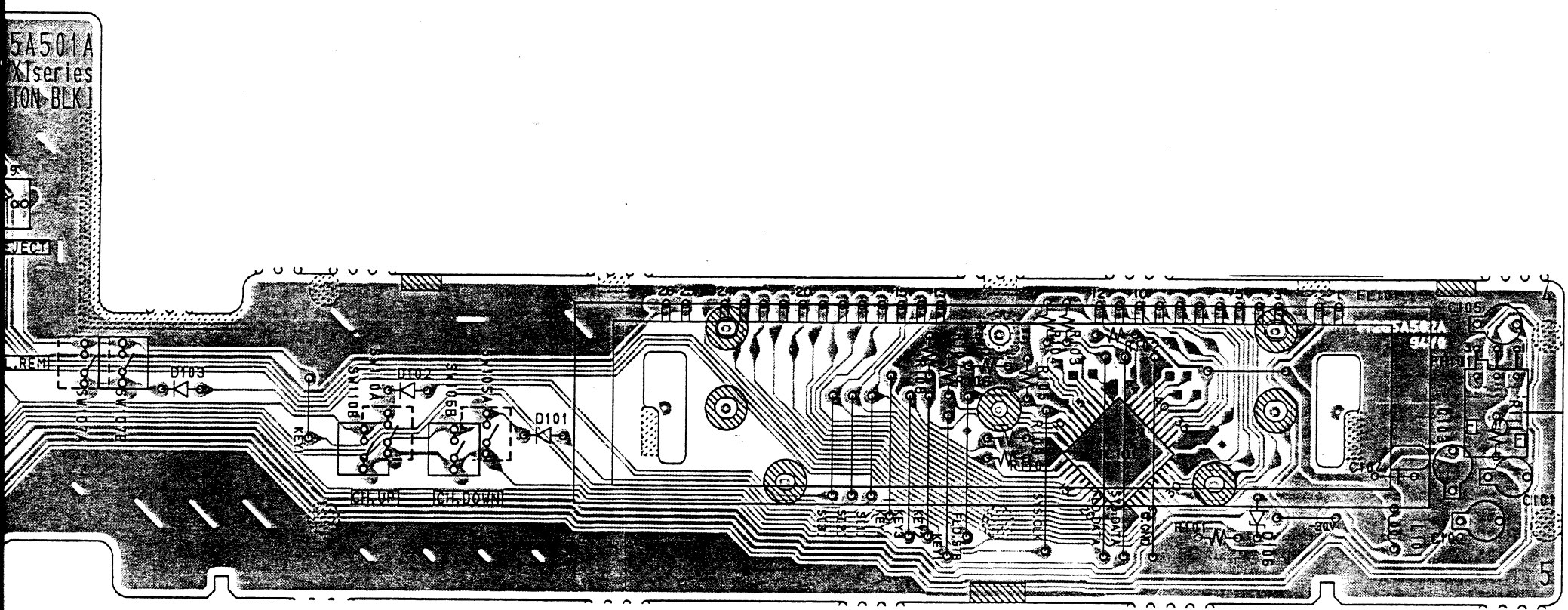
WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

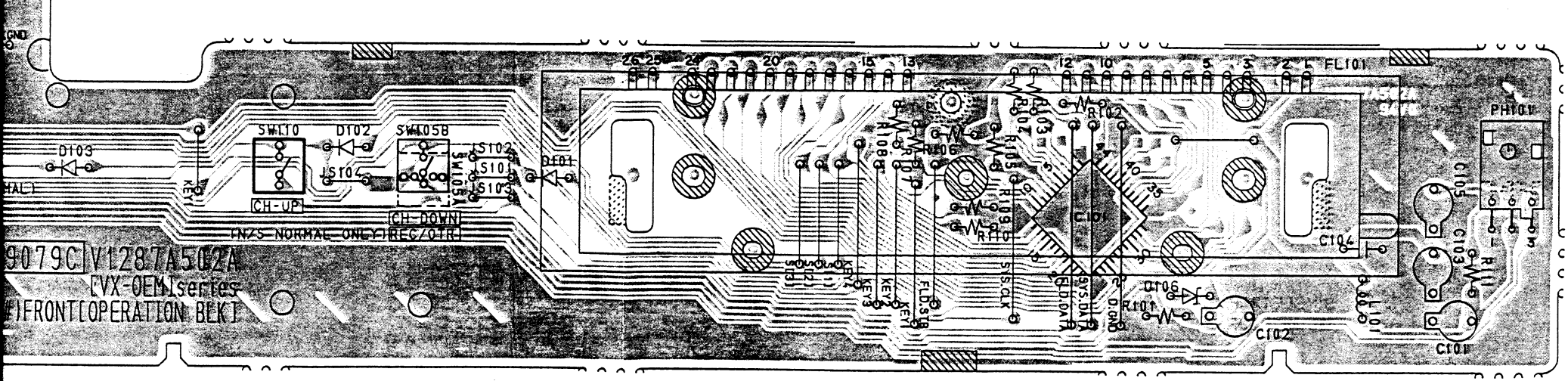


FRONT INPUT PCB V1285A502B





OPERATION PCB V1285A502A



OPERATION(OEM) PCB V1287A502A

*A ONLY

FRONT INPUT PCB
V1285A502B

FRONT. VIDEO. IN
PJ1
YKB11-3003

FRONT. AUDIO. IN
PJ3
YKB11-3004

TR1 2SC1740S
TR11 DTC143TS
TR3 DTC143TS

TO MAIN PCB 3/5 P301 (I/O BLK)

P4
SOCKET05FE-ST-VK-N

IDL9V	5
AV2. V	4
A. GND	3
AV2. A. L	2
AV2. A. R	1

*A: WITH FRONT
G285. 485EA
G296. 496EDG
G296. 496EO
G293. 493EM
G296. 496SEG

*B: 2SCART
G295. 496EDG
G297EK
G286. 291. 296. 496EO
G281. 295. 481. 496SEG
3008CE/NE. 3018CE/NE
3048CE. 1638NE
4008NE. 4018NE
6158NE. 6258NE

*E: OEM(NORMAL)
3008CE. NE
3018CE. NE
3048CE. NE
1638NE-SALORA
NOKIA

*G: OEM(NORMAL)
4008NE.
4018NE-LUXOR
6158NE. 6258NE-FINLUX

REAR RCA PCB
V1285A502D

G280. 285EA
G280ES
G480. 485EA
G290. 293. 493EM
ONLY

P201
SOCKET52418-0910

R. V. OUT	9
A. GND	8
R. L. OUT	7
R. R. OUT	6
A. GND	5
R. R. IN	4
R. L. IN	3
A. GND	2
R. V. IN	1

TO MAIN PCB 3/5 PB03 (I/O BLK)

PJ301
SOCKET 035053610O BLACK 21P
AV2/DEC

P301
SOCKET00 6216 013 110A

DEC. V. IN	1
BLANK	2
DEC. V. OUT	3
RED	4
A. GND	5
GREEN	6
A. GND	7
BLUE	8
DEC. R. OUT	9
DEC. L. OUT	10
DEC. L. IN	11
DEC. R. IN	12
DEC. CTL	13

TO MAIN PCB 3/5 PB01 (I/O BLK)

*B ONLY

SCART SOCKET PCB V1285A502C
SCART SOCKET(OEM) PCB V1287A502C

OPERATION PCB V1285A502A
OPERATION(OEM)PCB V1287A502A

FL101
FV7586

TO MAIN PCB 4/5 P403
(SERVO/SYSCON BLK)

P101
SOCKET10FE-ST-VK-N

FL+	10
FL-	9
D. GND	8
FLD. STB	7
FLD. DATA	6
SYS. DATA	5
SYS. CLK	4
REMCON	3
IDL5V	2
-30V	1

PH101
GPIU281X

IC101
UPD16312GB-384

SW107 TSTD-2 CALL. REM (*EXCEPT OEM) / PAUSE/STILL (*OEM ONLY)
SW108 TSTD-2 FF
SW109 TSTD-2 STOP/EJECT
SW108B TSTD-2
SW103 TSTD-2 REW
SW104 TSTD-2 POWER
SW101 TSTD-2 PLAY
SW102 TSTD-2 REC/OTR (*EXCEPT E)
SW105A TSTD-2 (*E ONLY)
SW105B TSTD-2
SW110 TSTD-2 CH. UP
CH. DOWN
SW105 TSTD-2 AKAI ONLY
*1 E: REC/OTR

KEY1, KEY2, KEY3, KEY4

FLD. STB. FLD. DATA. SYS. DATA. SYS. CLK

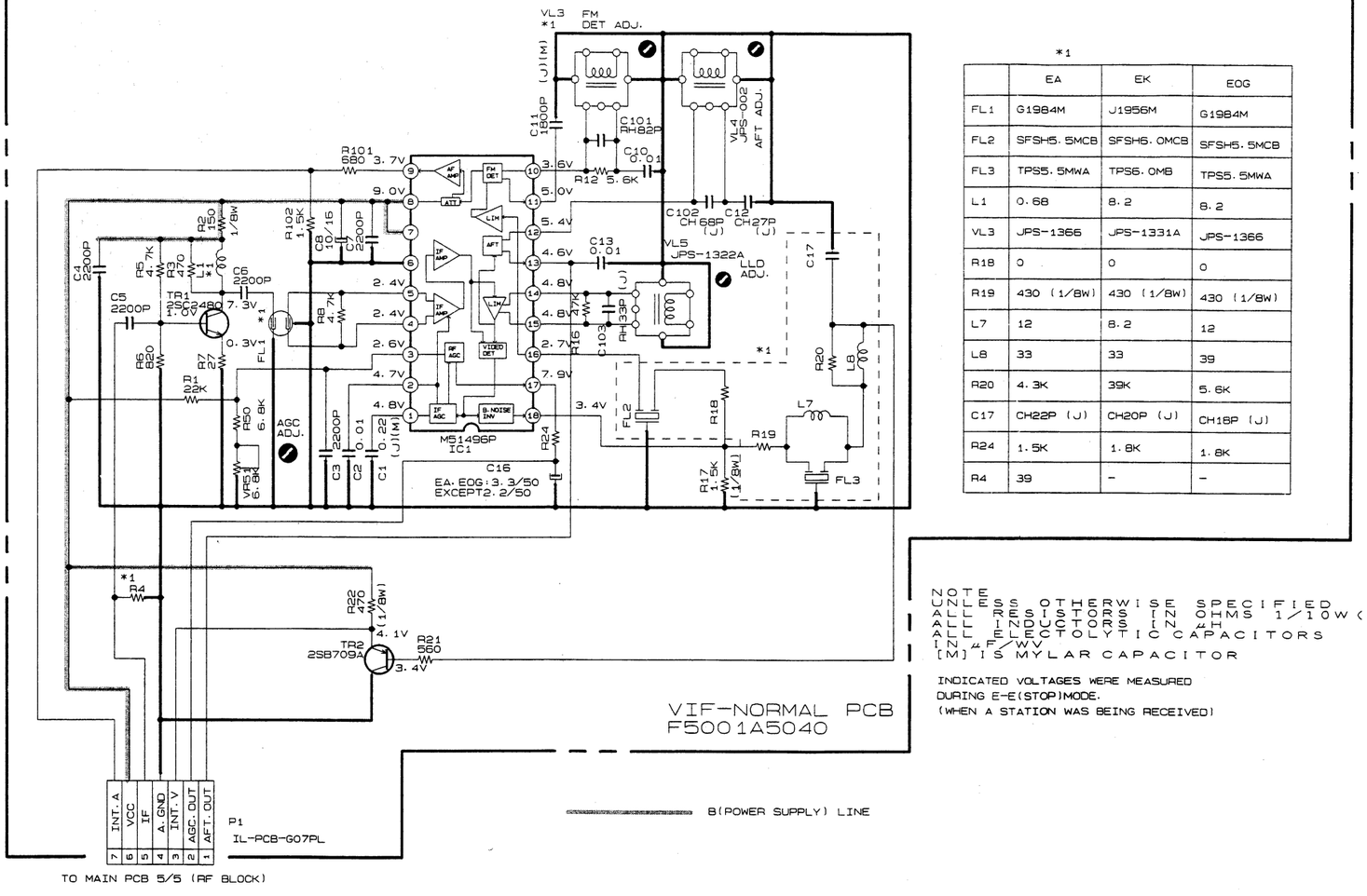
INDICATED VOLTAGES WERE MEASURED DURING E-E(STOP)MODE.

B(POWER SUPPLY) LINE
AUDIO SIGNAL LINE
VIDEO SIGNAL LINE
R.G.B SIGNAL LINE

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF
ALL INDUCTORS IN μH

OPERATION & I/O SCHEMATIC DIAGRAMS

NO. 10-7 V1281807M

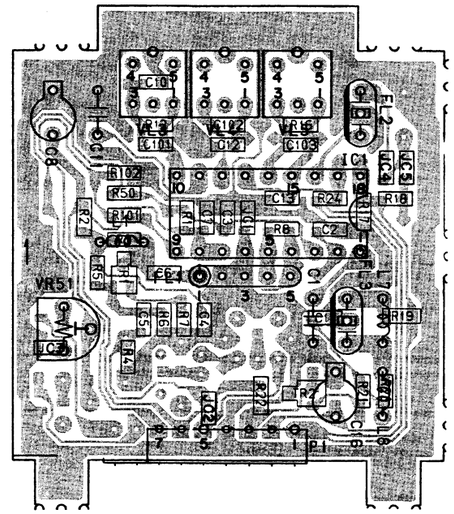


*1

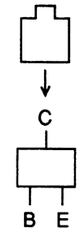
	EA	EK	EOG
FL1	G1984M	J1956M	G1984M
FL2	SFSH5.5MCB	SFSH6.0MCB	SFSH5.5MCB
FL3	TPS5.5MWA	TPS6.0MB	TPS5.5MWA
L1	0.68	8.2	8.2
VL3	JPS-1366	JPS-1331A	JPS-1366
R18	0	0	0
R19	430 (1/8W)	430 (1/8W)	430 (1/8W)
L7	12	8.2	12
L8	33	33	39
R20	4.3K	39K	5.6K
C17	CH22P (J)	CH20P (J)	CH18P (J)
R24	1.5K	1.8K	1.8K
R4	39	-	-

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/10W (J)
ALL INDUCTORS IN μH
ALL ELECTOLYTIC CAPACITORS IN μF/WV
[M] IS MYLAR CAPACITOR

INDICATED VOLTAGES WERE MEASURED DURING E-E(STOP)MODE. (WHEN A STATION WAS BEING RECEIVED)



SINGLE CHIP TRANSISTOR

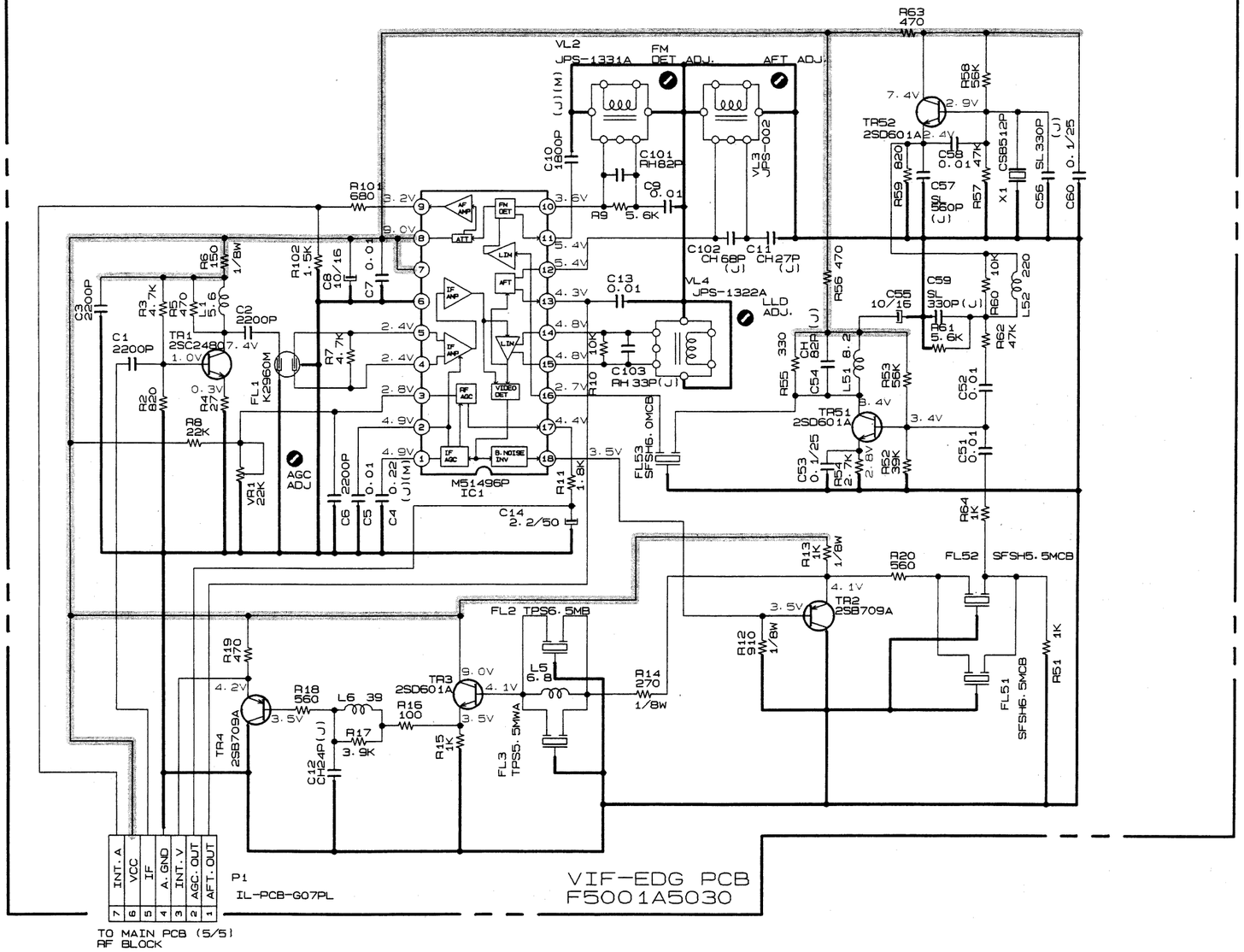


VIF-NORMAL PCB F5001A5040

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.

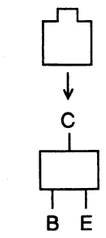
VIF NORMAL (EA/EK/EO/EM/ES & OEM MODELS) SCHEMATIC DIAGRAM

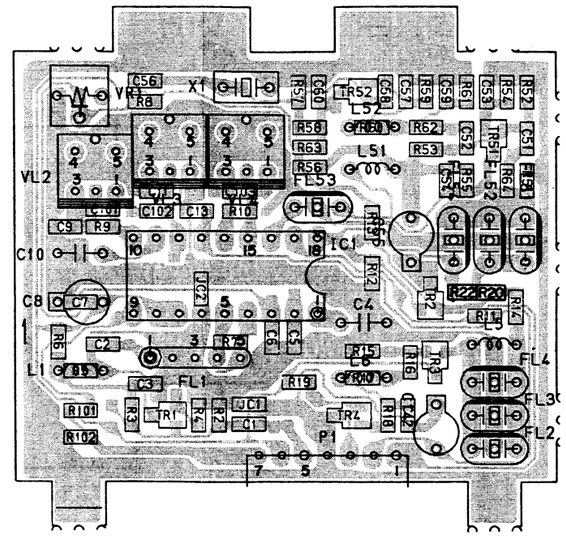
NO. 10-8 F5003804M



VIF-EDG PCB
F5001A5030

SINGLE CHIP TRANSISTOR





VIF-EDG PCB F5001A5030(NI)

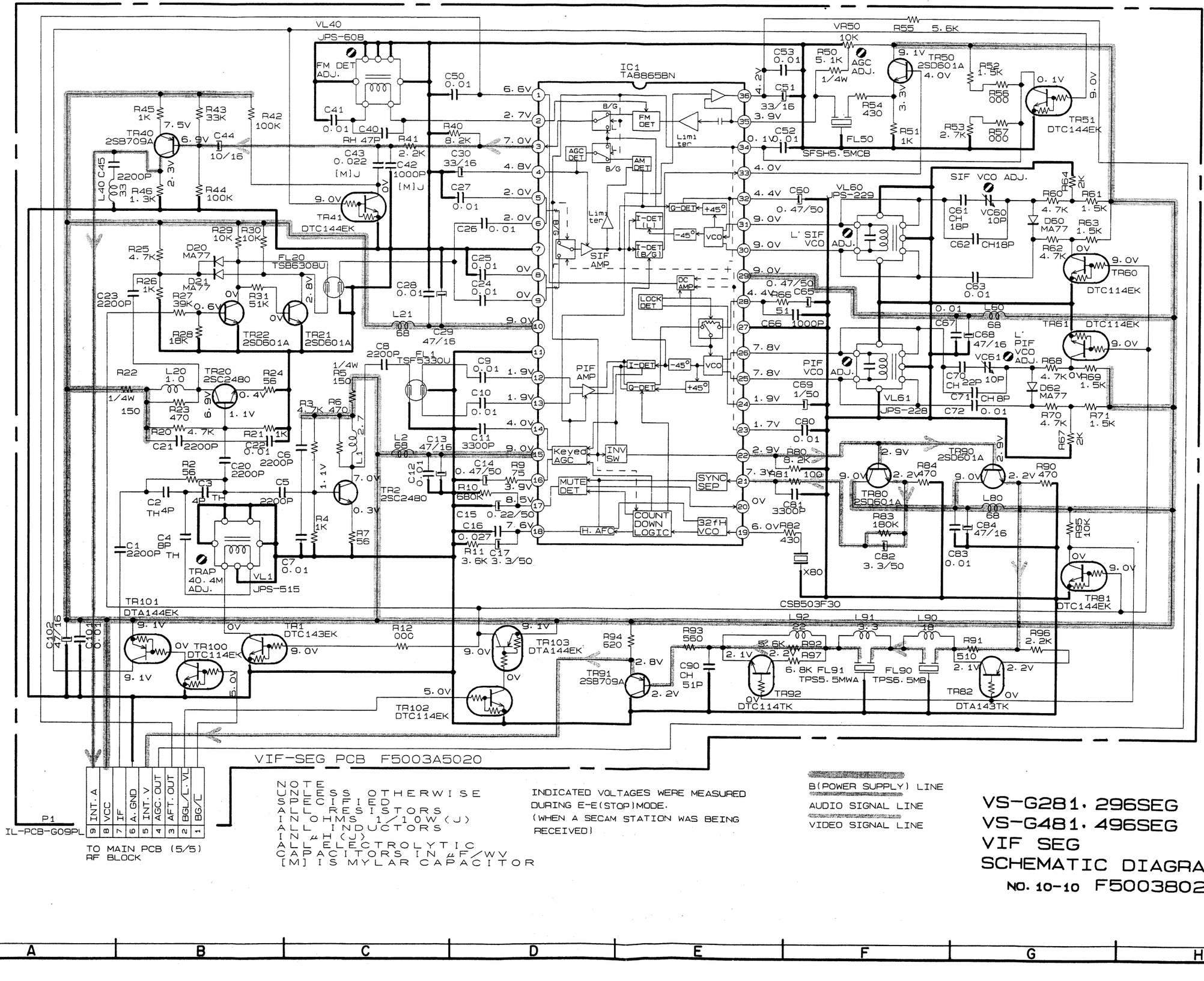
NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/10W (J)
ALL INDUCTORS IN μH
ALL ELECTOLYTIC CAPACITORS
IN μF/WV
[M] IS MYLAR CAPACITOR

B(POWER SUPPLY) LINE

INDICATED VOLTAGES WERE MEASURED
DURING E-E(STOP)MODE.
(WHEN A STATION WAS BEING RECEIVED)

VS-G280.296EDG
VS-G480.496EDG
VIF EDG
SCHEMATIC DIAGRAM
NO. 10-9 F5003803M

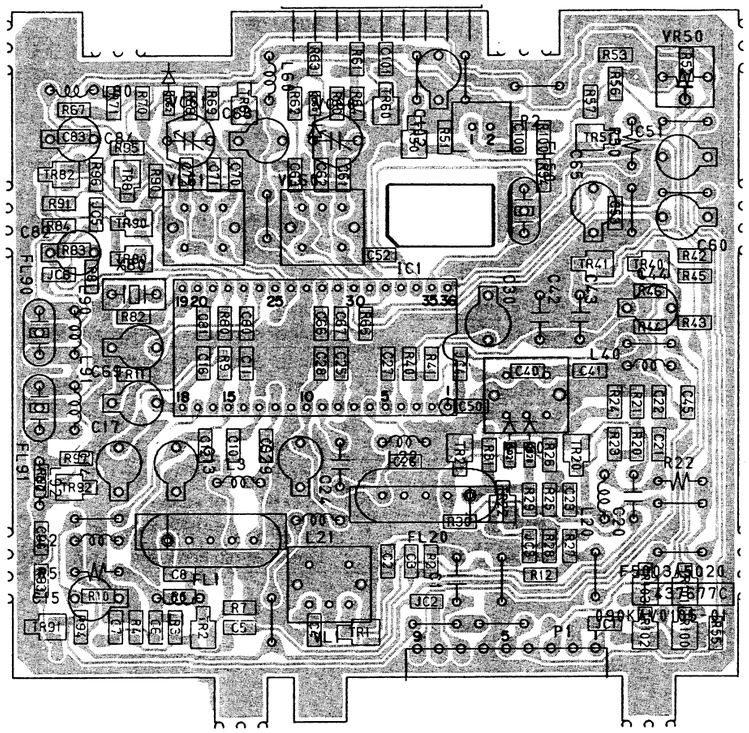


NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/10W(J)
ALL INDUCTORS IN μH(J)
ALL ELECTROLYTIC CAPACITORS IN μF/WV
[M] IS MYLAR CAPACITOR

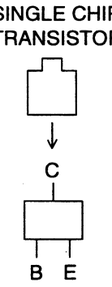
INDICATED VOLTAGES WERE MEASURED DURING E-E(STOP)MODE.
(WHEN A SECAM STATION WAS BEING RECEIVED)

B(POWER SUPPLY) LINE
AUDIO SIGNAL LINE
VIDEO SIGNAL LINE

VS-G281.296SEG
VS-G481.496SEG
VIF SEG
SCHEMATIC DIAGRAM
NO. 10-10 F5003802M



VIF-SEG PCB F5003A5020



NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.

INFORMATION OF ICs & FLDs

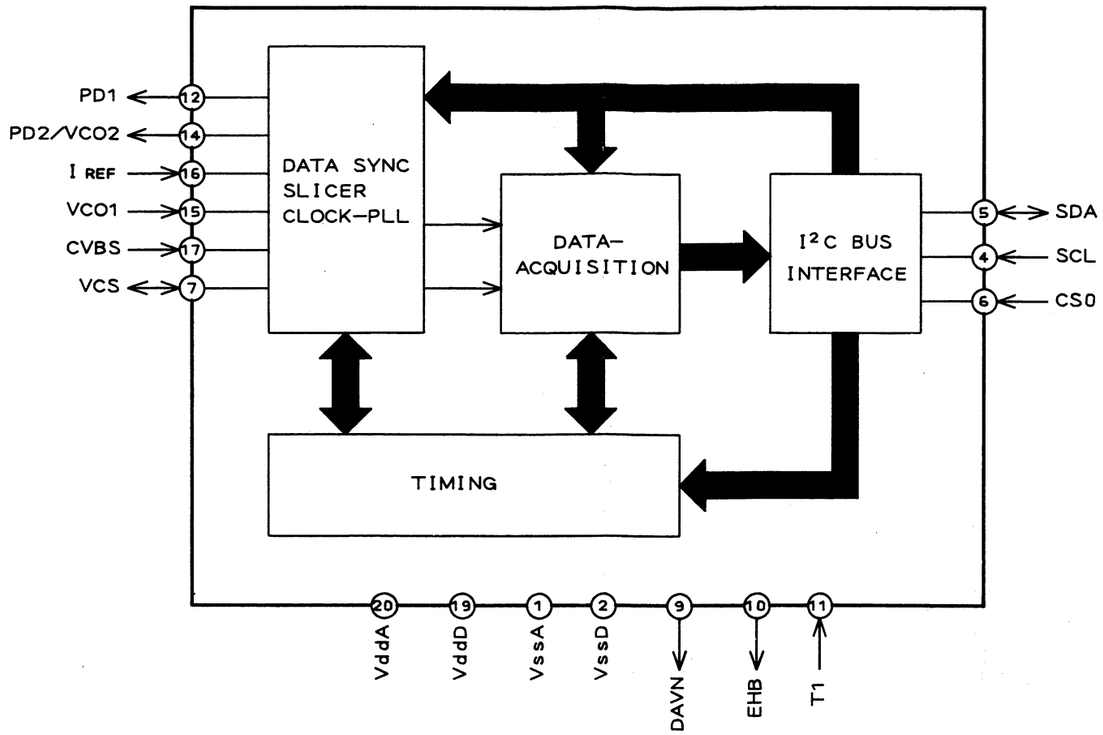
LA71507ML (Multi VHS VTR audio and video signal processor)

PIN No.	PORT NAME	I/O	FUNCTION
1	A.REC-OUT	O	Linear audio REC signal output.
2	A.GND	–	Ground pin for linear audio section.
3	A.AUTO BIAS-IN	I	Linear audio auto bias input pin.
4	A.EQ-SW	–	Linear audio equalizer switching pin.
5	A.AUTO BIAS-C	–	Be connected to the collector of the auto bias drive transistor.
6	A.AUTO BIAS-B	–	Be connected to the base of the auto bias drive transistor.
7	A.EQ-IN	I	Linear audio PB equalizer AMP input pin.
8	A.EQ-NFB	–	Linear audio PB equalizer AMP negative feedback pin.
9	A.EQ-SW1	–	Linear audio PB equalizer AMP SP/LP equalizer switching pin.
10	A.EQ-OUT	O	Linear audio PB equalizer AMP output pin.
11	A.LINE/PB-IN	I	Linear audio PB equalized signal and the CALL REMOCON swept signal input pin.
12	AGC-TC1/BAL	–	Filter pin for AGC and carrier leak balancer.
13	ACC-FILT	–	Filter pin for the ACC circuit.
14	REC.C-OUT	O	REC chroma signal output pin.
15	PB.Y-FM/C-IN	I	PB Y FM and PB low chroma signal (from PRE AMP) input pin.
16	EQ-FILT	–	Filter pin for the equalizer circuit.
17	PB.EQ-OUT	O	PB equalizer circuit output pin.
18	REC.Y-FM-OUT	O	REC Y signal output pin.
19	REC.H-OUT	O	REC AMP control pin (Not used).
20	PB.Y-FM-IN	I	PB Y FM signal input pin.
21	TRICK-H	O	PRE AMP control output when trick mode (trick mode: H).
22	AGC-TC2	–	Filter pin for the AGC circuit.
23	PEAKING	–	PB emitter peaking control pin.
24	MAIN EMPH	–	Filter pin for main emphasis circuit.
25	REC.Y/DE-EMPH	O	REC Y signal and PB main de-emphasis signal output pin.
26	CLAMP-IN	I	REC or PB-Y signal input pin of the CLAMP circuit.
27	Y.GND	–	Ground pin for the Y-signal circuit.
28	VIDEO IN1	I	Video input 1 pin.
29	FBC-FILT	–	Filter pin for feedback clamp.
30	VIDEO IN2	I	Video input 2 pin.
31	REG	–	Capacitor connecting pin for the internal regulator.
32	VIDEO IN3	I	Video input 3 pin.
33	QV,QH-INS	I	Quasi V pulse, Quasi H pulse insert pin or character insert pin.
34	VPS OUT	O	Selected VIDEO IN signal output pin for VPS/PDC circuit.
35	AGC-IN	I	Video AGC AMP input pin.
36	Y-Vcc	–	Power supply pin for the Y signal circuit.
37	SYNC-OUT	O	Separated composite sync signal output pin.
38	VIDEO-OUT	O	E-E/PB composite video signal output pin.
39	VCA-FILT	–	Filter pin for the VCA of the YNR circuit.
40	VCA-IN	I	YNR-VCA clamp circuit input pin. (1H delayed signal input.)
41	60/$\overline{50}$	O	V-sync detection output (60 HZ: H, 50 Hz: L)
42	Y-CCD DRIVE	O	YNR output pin to the CCD 1H delay line.
43	NTSC-H	O	NTSC mode control output (NTSC: H)
44	PB.APC2	–	Capacitor connecting pin.
45	PB.CHROMA-IN	I	PAL/SECAM/NTSC PB chroma signal input to the Y/C mixing circuit.
46	PB.CHROMA-OUT	O	PAL/NTSC PB chroma signal output pin.
47	C-Vcc	–	+5 V power supply for chroma circuit.
48	C-CCD DRIVE2	O	Chroma signal output pin to the CCD comb filter.
49	SLD-FILT	–	Filter pin for SLD circuit.
50	C-CCD DRIVE1	O	Chroma signal output pin to the CCD comb filter.
51	AFC/APC FILT	–	Filter pin for the AFC & APC circuit.
52	C-CCD-IN	I	Chroma signal input pin from the CCD comb filter.
53	PA-STOP/TR-SW	–	TR switch turns on only PAL phase alternate stop mode.
54	REC.APC FILT	–	Filter pin for REC APC circuit.
55	VX01/X01-IN	I	3.58 MHz crystal connecting pins. These pins should be pulled up to Vcc when
56	VX01/X01-OUT	O	4.43 MHz only mode.
57	C-GND	–	Ground pin for the chroma circuit.
58	VX02/X02-OUT1	O	4.43 MHz crystal oscillator output.
	PB.H-OUT		PB H output pin for SECAM chroma IC control.
59	VX02/X02-OUT2	O	4.43 MHz crystal connecting pins.
60	VX02/X02-IN	I	
61	KILL-FILT	–	Filter pin for color killer detector (color:1.9 V, killer:3.1 V).
62	ACK/SLD-OUT	O	ACK DET OUT (killer mode: more than 4.0 V, color mode: 0 V).
63	SCK-IN	I	Serial clock (I2.SCL) input pin.
64	SDA-IN	I	Serial data (I2.SDA) input pin.
65	SECAM-DET	O	NTSC mode → only S-VHS PB: L except NTSC mode → SECAM detector output (E-E SECAM/MESECAM & PB MESECAM: H).
66	C-ROT-IN	I	Chroma rotation pulse input pin.
67	HEAD-CTL-IN	I	In order to correct color sequence by balanced modulator in the PAL trick mode, Input a head control pulse to this pin.
68	SECAM-DET-LPF	–	Capacitor connecting pin for SECAM detector low pass filter.
69	SECAM-DET-ADJ	–	Detection sensitivity can be adjusted by externally adding certain voltage to this pin.
70	A.MUTE-CTL	I	Linear audio muting control input pin.
71	A.LINE-IN1	I	Linear audio line input 1 pin.
72	A.ALC-DET	–	Linear audio ALC (automatic level control) detector filter pin.
73	A.LINE-IN2	I	Linear audio line input 2 pin.
74	A.VREF-FILT	–	Filter pin for linear audio V-reference circuit.
75	A.LINE-IN3	I	Linear audio line input 3 pin.
76	A.Vcc	–	Power supply pin for linear audio circuit.
77	A.LINE-OUT	O	Linear audio PB or E-E signal output pin.
78	A.ALC-DET-IN	I	ALC detector input pin.
79	A.REC-IN	I	Linear audio REC AMP input pin.
80	A.HEAD-SW	–	Linear audio head switch pin. (REC: H, PB: L)

LA70011 (4-CH REC/HEAD AMPLIFIER)

PIN No.	PORT NAME	I/O	FUNCTION
1	TRICK.H	I	3.0V > : trick 1 mode, 3.0 - 1.0 V : normal mode, 1.0 V < : trick 2 mode.
2	COMP-OUT	O	Comparator output for head switching between LP and SP head during search (trick) mode. (LP>SP ENV : "H") (PB : H : > 4.0V, L : < 0.7 V REC : open)
3	HA	I	SP/LP select control pin. (1.5 V > : LP mode, 1.5 V < : SP mode)
4	SW30	I	Switching pulse input (H-ch : > 1.0 V, L-ch : < 1.0 V). (SP mode : L→CH-1, H→CH-2, LP mode : L→CH-2, H→CH-1)
5	H-SYNC	I	H sync input pin. (threshold level : 1.5 V)
6	ENVDET-OUT	O	Envelope detect output for auto tracking.
7	PB-OUT	O	PB Y-FM signal output.
8,20	GND	–	Ground pin.
9	REC-Y IN	I	REC Y-FM signal input pin.
10	REC-C IN	I	REC chroma signal input pin.
11	REC/MUTE/PB	I	REC/REC mute/PB control pin. 1.0 V < : PB mode, 1.0V - 3.0 V : REC (mute) mode, 3.0 V > : REC mode.
12	REC.CUR ADJ2	I	REC current adjust pin. REC current can be adjusted within –6.0 dB to +3.5 dB from the value that is set at 14 pin (REC.CUR ADJ1).
13	Vcc	–	Power supply of this IC.
14	REC.CUR ADJ1	I	If 12 pin is open, REC current is set by the resistor that is connected between 13 pin and this pin.
15	REC AGC FILT	–	Capacitor connecting pin for REC AGC circuit.
16	SP CH-1 IN	I	PB : SP channel-1 head AMP input. (REC : Vcc output)
17	REC SP OUT	O	REC SP pull down output.
18	PB FILT	I	This pin will be internally grounded on PB mode.
19	SP CH-2 IN	I	PB : SP channel-2 head AMP input. (REC : Vcc output)
21	LP CH-2 IN	I	PB : LP channel-2 head AMP input. (REC : Vcc output)
22	REC LP OUT	O	REC LP pull down output.
23	PB FILT	I	This pin will be internally grounded on PB mode.
24	LP CH-1 IN	I	PB : LP channel-1 head AMP input. (REC : Vcc output)

SDA5650XGEG (VPS/PDC decoder)

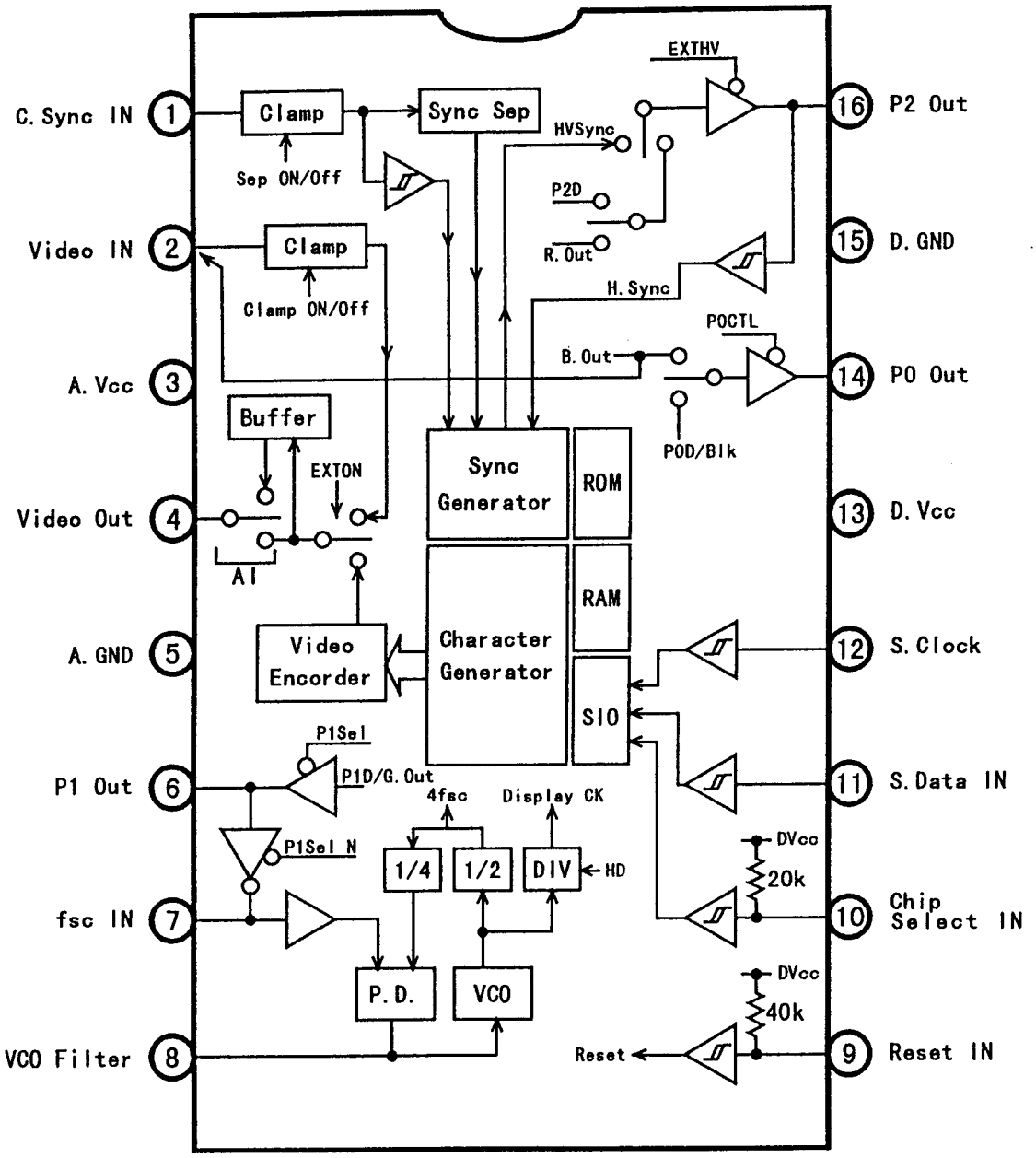


PIN No.	PORT NAME	I/O	FUNCTION
1	VSS	–	Ground pin.
2	VSSA	–	Ground pin for analog section.
3,8,13,18	N.C.	–	Not connected.
4	SCL	I	Serial clock input of I²C-Bus.
5	SDA	I/O	Serial data input of I²C-Bus.
6	CS0	I	Chip select input determining the I²C-Bus addresses: 20H/21H, when pulled low. 22H/23H, when pulled high.
7	VCS	I/O	Video Composite Sync output from sync slicer used for PLL based clock generation.
9	DAVN	O	Data available output active low, when PDC/VPS data is received.
10	EHB	O	Output signaling the presence of the first field active high.
11	TI	I	Test input: activates test mode when pulled high. Connect to ground for operating mode.
12	PD1	O	Phase detector/charge pump output of data PLL (DAPLL).
14	PD2/VCO2	O	Connector of the loop filter for the SYSPLL.
15	VCO1	I	Input to the voltage controlled oscillator #1 of the DAPLL.
16	IREF	I	Reference current input for the on-chip analog circuit.
17	CVBS	I	Composite video signal input.
19	VDDD	–	+5 V positive supply voltage input for the digital circuits.
20	VDDA	–	+5 V positive supply voltage input for the analog circuits.

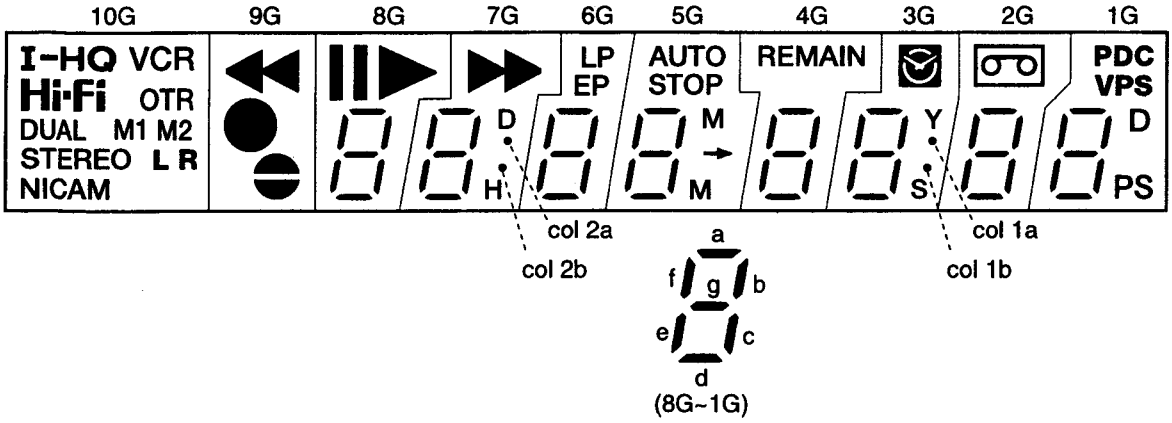
M37777MAA VXHSY (Servo & system control MI-COM)

PIN No.	PORT NAME	I/O	FUNCTION
1	SS	I	Tape start sensor input.
2	ES	I	Tape end sensor input.
3,21-24 32	NC	–	Not used.
4	$\overline{TV}$/VCR	O	RF converter on/off control output.
5	BAND A	O	Tuner band select control.
6	BAND B		
7	WS/DEC.CTL	I	Decoder & wide screen judge input. (0 - 1.2V : not scrambled, 1.6 - 3.3 V : wide screen, 3.8 - 5.0 V : scrambled)
8	CK.DET	I	PAL (NTSC) chroma judge input (color killer).
9	HIFI ENV DET	I	Hi-Fi audio RF envelope detect input for I-HQ and auto tracking.
10	V.ENV.DET	I	Video RF envelope detect input (A/D) for I-HQ and auto tracking.
11	V.REC.VOL	O	Video head REC current control output (D/A).
12	V.REC.S	O	Video recording control output (L/M/H) (REC: H).
13	VP	O	Quasi V sync output & video mute control output.
14	$\overline{REMOCON}$	I	Remote control signal input pin.
15	C.ROT	O	Chroma rotation pulse output.
16	HEAD.CTL	O	SP/LP head select control output.
17	COMP.OUT	I	Comparator signal input from PRE AMP IC for video head switching during CUE/REV mode.
18	V.SWP	O	Video head CH-1 and CH-2 switching control output.
19	A.SWP	O	Hi-Fi audio head CH-1 and CH-2 switching control output.
20	A.REC.S	O	Audio recording on/off control output (REC: L).
25	SP/LP	O	Video/audio EQ control output regarding tape speed (SP: L).
26	$\overline{CDC}$	O	Color sequence compensation control when LP trick mode. (PAL, LP, trick: L)
27	$\overline{SECAM}$	O	MESECAM select control output (NTSC/PAL/SECAM: H, MESECAM: L).
28	$\overline{SEC.MES}$	O	SECAM & MESECAM select control output (SECAM & MESECAM: L)
29	A.MUTE	O	Audio signal output muting control.
30	BGL/$\overline{L.VL}$	O	VIF RF system switching control output (SEG model only).
31	BG/$\overline{L}$		
33	$\overline{NT.SP}$	O	Audio EQ control output for NTSC SP mode.
34	NUB	–	Not used.
35	NUA		
36	CLKSEL	I	Clock select pin. (connected to Ground)
37	Vcc	I	+5 V power supply input pin.
38	XTAL.1 IN	I	Crystal connecting pin for main clock (16 MHz).
39	XTAL.1 OUT	O	
40	Vss	–	Ground pin.
41	XTAL.2 IN	I	Crystal connecting pin for sub clock (32.768 kHz).
42	XTAL.2 OUT	O	
43	$\overline{RESET}$	I	Reset input of this IC.
44	MODU/BG	O	MODU: RF converter on/off control (except EM-K)/BG: audio system select control (EM-K only).
45	$\overline{AFT\ LOW}$	O	AFT on/off control output (L: on, H: off)
46	VJ/DK	O	VJ: Video signal judge output. (L: no video signal) (except EM-K)/ DK: audio system select control (EM-K only).
47 - 49	DCH1 - 3	O	Digital tuner control output.
50	S.DET	I	SECAM (MESECAM) judge input (SECAM or MESECAM: H).
51	T.MUTE	O	Tuner muting control output (mute: H).
52	I/O CTL.A	O	I/O control signal output.
53	I/O CTL.B		
54	TEST.CTL	O	PB CTL signal monitoring pin.
55	CALL.REM	O	Call REMOCON function on/off control.
56	$\overline{P.DOWN}$	I	Power down detect input.
57	AL	O	RF BLK +9 V power supply and AL5 V power supply on/off control.
58	TRQ.UP	O	Loading motor drive voltage control output. (torque up: H)
59	LM.F	O	Loading motor direction control.
60	LM.R		

PIN No.	PORT NAME	I/O	FUNCTION
61 - 63	RSW3 - RSW1	I	Rotary switch (mechanism position detect switch) input.
64	$\overline{CTL.GAIN}$	O	CTL AMP gain select control output (FF/RWD: L).
65	$\overline{DAVN}$	I	VPS/PDC reception signal input pin.
66	FLD.STB	O	Strobe signal output to the OSD IC.
67	$\overline{OSD.CS}$	O	Chip select output to the FLD/operation MI-COM.
68	SYS.DATA	O	Serial data output to the OSD & FLD/operation MI-COM.
69	OSD.DATA	I	Serial data input from the FLD/operation MI-COM.
70	SCLK/CLK	O	Serial clock output to the OSD & FLD/operation MI-COM.
71	I2.SCL	O	Serial clock output to the I2C BUS line.
72	I2.SDA	I/O	Serial data input/output to/from the I2C BUS line.
73	CALL.REM	O	Sweep signal output for the "CALL REMOCON" function.
74	CM.STOP	O	Capstan motor on/off control output.
75	$\overline{F}$/R	O	Capstan motor direction control.
76	TU.PWM	O	PWM pulse output for tuning control.
77	CM.PWM	O	PWM pulse output for the capstan motor phase & speed control.
78	DM.PWM	O	PWM pulse output for the drum motor phase & speed control.
79	SRP	I	Supply reel rotation pulse input pin.
80	TRP	I	Take up reel rotation pulse input pin.
81	HI.SPEED	O	Not used (Capstan motor drive voltage control output).
82	$\overline{SHORT}$	I	Power supply voltage (AL9 V) too high detect input. (more than 9 V: L)
83	REC.SAF	I	REC safety switch input.
84	C.SYNC	I	Composite sync signal input for servo control.
85	CM.FG	I	Capstan motor FG signal input pin.
86	DM.PG	I	Drum motor PG signal input pin.
87	DM.FG	I	Drum motor FG signal input pin. (24 pulses/1revolution)
88	AMP.Vss	–	CTL AMP ground pin.
89	AMP.VREF.OUT	O	Analog AMP reference voltage output.
90	AMP.VREF.IN	I	Analog AMP reference voltage input.
91	CTL–	I/O	CTL – in/out pin.
92	CTL+	I/O	CTL + in/out pin.
93	CTL+SWOUT	O	CTL+ SW output.
94	CTL AMP IN	I	CTL AMP input pin.
95	AMPC	I	AMP AC ground pin.-
96	CTL.Vss	I	Ground pin for CTL AMP power supply.
97	CTL.AMP.OUT	O	Output pin of CTL AMP.
98	AMP Vcc	I	+5 V power supply input for AMP section.
99	A.Vcc	I	Reference voltage input of the A/D or D/A converter.
100	AFT.E	I/O	A/D converter input for detecting the tuning point.


C. Sync IN
1
Clamp
Sep ON/Off
Sync Sep
EXTHV
HVSync
16
P2 Out
P2D
R. Out
Video IN
2
Clamp
Clamp ON/Off
15
D. GND
H. Sync
POCTL
B. Out
A. Vcc
3
14
PO Out
Buffer
POD/Blk
EXTON
Sync Generator
ROM
Video Out
4
13
D. Vcc
AI
RAM
Video Encorder
Character Generator
A. GND
5
12
S. Clock
SIO
P1Sel
P1D/G. Out
P1 Out
6
4fsc
Display CK
11
S. Data IN
P1Sel N
1/4
1/2
DIV
HD
DVcc
20k
fsc IN
7
10
Chip Select IN
P. D.
VCO
DVcc
40k
VCO Filter
8
Reset
9
Reset IN

GRID ASSIGNMENT



INTERNAL CONNECTION

	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	DUAL	—	a	a	a	a	a	a	a	a
P2	M2	—	b	b	b	b	b	b	b	b
P3	L	—	c	c	c	c	c	c	c	c
P4	NICAM	—	d	d	d	d	d	d	d	d
P5	STEREO	—	e	e	e	e	e	e	e	e
P6	M1	—	f	f	f	f	f	f	f	f
P7	R	—	g	g	g	g	g	g	g	g
P8	I-HQ	—	—	col 2b	—	→	—	col 1b	—	PS
P9	—	—	—	H	—	M (lower)	—	S	—	—
P10	OTR	⊖	▶	col 2a	EP	M (upper)	—	col 1a	—	D
P11	Hi-Fi	●	▮	D	LP	STOP	—	Y	—	VPS
P12	VCR	◀◀	▮	▶▶	—	AUTO	REMAIN	⊡	⊡	PDC

ABBREVIATIONS (VIDEO)

ABBREVIATION	EXPLANATION
A	Audio or Analogue
AC	Alternating Current
ACC	Automatic Color Control
A/C	Audio and Control
ADJ	ADJust (ment)
AFC	Automatic Frequency Control
AFT	Automatic Fine Tuning
AGC	Automatic Gain Control
AH	Audio Head
AL	ALways (voltage)
ALC	Automatic Level Control
A-SW.P	Audio SWitching Pulse
A-MUTE	Audio MUTE
ANT	ANTenna
APC	Automatic Phase Control
ASSY	ASSemblY
BAL	BALance
B DOWN	Break DOWN
BGP	Burst Gate Pulse
BLK	BLocK or BLacK
BOP	Blank Output Pulse
BPF	Band Pass Filter
BU	Back Up (voltage)
B/W	Black and White
C	Chroma or Color
CCD	Charge Coupled Device
CCIR	Comit Consultatif International des Radio communications
CH (ch)	CHannel (channel)
CLK	CLocK
CM	Capstan Motor
CN	CoNnector
COMP	COMParator
CSW	Cassette SWitch
CSYNC	Composite SYNC
CTL	ConTrol
CUE	CUE
DAC	Digital to Analog Converter
DC	Direct Current
DEMOD	DEMODulator
DET	DETetct (DETector)
DL	Delay Line
DM	Drum Motor
DOC	Drop Out Compensator
D.P.E	Drum Phase Error
D.PG	Drum Pulse Generator
EE	Electronic to Electronic
EF	Emitter Follower
EMPHA	EMPHAsis
ENV	ENVelope
EP	Extended Play
EP ROM	Erasable Programmable ROM
EQ	EQualizer
FE	Full track Erase
FF	Flip-Flop or Fast Foward
FG	Frequency Generator
Fig	Figure
FLD	FLuorescent Display
FM	Frequency Modulation
Fo	resonance Frequency
FREQ	FREQuency
GND	GrouND
H	Horizontal
HP	Horizontal (sync) pulse
HPF	High Pass Filter
HQ	High Quality System
IC	Integrated Circuit
ID	IDentification
IDL	IDLe (Voltage)
IMS	Interactive Monitor System
INS	INSert
INV	INVerter
L	Left
LED	Light Emitting Diode
LIM	LIMitter
LM	Loading Motor
LM STP	Loading Motor STop
LP	Long Play
LPF	Low Pass Filter
ME-SECAM	Middle East SECAM
MI-COM	MIcro COMputer
MM	Mono-stayble Multi

ABBREVIATION	EXPLANATION
MOD	MODulator
MRS	Motor ReverSe
NAP	Ntsc Amusement Pal
NG	Noise Gate
NICAM	Near Instanteneous Compand Audio Multiplex
NON-LIN	NON-LINear
N.T.S.C.	National Television System Committee
OSC	OSCillator
PAL	Phase Alternation by Line
PB	Play Back
PCB (P.C.B)	Printed Circuit Board
P-COM	Phase-COMparator
P DOWN	Power DOWN
PG	Pulse Generator
P.I.P	Picture In Picture
PL, PLG	PLunger (PLunGer)
PRG (PGM)	PRoGram (ProGraM)
PU	Pick UP (head, pulse)
PWR	PoWeR
Q	Quality factor
R	Right
RAM	Random Access Memory
REC	RECord
REF	REFerence
REF-V	REFerence Vertical signal
REG	REGulator
REV (REVW)	REView (REVieW)
REW	REWind
RF	Radio Frequency
ROM	Read Only Memory
R.S SW	Record-Safety SWitch
RST (RES)	ReSet (RESet)
RVS	ReVerSe
S	Sensor, Shield
SAW	Surface Acoustic Wave
SC	SimulCast
S CLK	Serial CLocK
SECAM	SÉquentiel Couleur À Mémoire
S & H	Sample and Hold
SLP	Super Long Play
SP	Standard Play
SPD	SPeeD
SRP	Supply Reel Pulse
SRV	SeRVo
SOW	Sync On Word
STBY	STandBY
S.VHS	Super VHS
SW	SWitch
SW'NG	SWitchiNG
SWP	SWitching Pulse
SYNC	SYNChronize
T-AUDIO	Tuner AUDIO
TPZ (TRAPE)	TraPeZoid (TRAPEzoid)
TRK	TRacKing
TRP	Take up Reel Pulse
T/U	Take Up
TV	TeleVision
UHF	Ultra High Frequency
UNR	UNRegulated (voltage)
V	Vertical or Video
VASS	Video Address Search System
VCO	Voltage Controlled Oscillator
VH	Video Head
VHF	Very High Frequency
VHS	Video Home System
VIF	Video Intermediate Frequency
VISS	Video Index Search System
VJ	Video Judge
VM	Voltage for Memory
VOB	Video On Blank
VOW	Video On Word
VP	Vertical (sync) Pulse
VPS	Video Program System
VPT	Video Programming by video Text
VT	Voltage for Tuning
WHT	WHiTe
Y	Luminance
2H	2 Hour (SP)
4H	4 Hour (LP)
6H	6 Hour (SLP/EP)